SECTION I. INTRODUCTION

This Fiscal Year 2002/2003 - 2003/2004 Advanced Core CAMA Land Use Plan is prepared in accordance with the requirements of the North Carolina Coastal Area Management Act (CAMA). Specifically, this document complies with Subchapter 15A NCAC 7B, "CAMA Land Use Planning Requirements," of the North Carolina Administrative Code, as amended, August 1, 2002.

The 7B guidelines provide that each of the twenty coastal counties prepare and adopt a CAMA Land Use Plan that meets the planning requirements adopted by the Coastal Resources Commission (CRC). If a county chooses not to prepare a plan, the guidelines specify that the CRC will prepare and adopt a CAMA Land Use Plan for that county.

In general, 7B requires that a plan include community concerns and aspirations (Section IV, page 6), analysis of existing and emerging conditions (Section V, page 9), a plan for the future including specific land use/development goals/policies (Section VI, page 134), and tools for managing development (Section VII, page 200). The management tools must specify the actions which Camden County will take to ensure implementation of this plan.

The organization of this plan follows the 15A NCAC 7B requirements for preparation of a CAMA Land Use Plan. The matrix provided on page -x- summarizes those requirements. The table of contents of this plan, along with the matrix, reflects the organization of the 7B requirements.

At the beginning of the preparation of this document, Camden County adopted a Citizen Participation Plan which is intended to ensure that all interested citizens have an opportunity to participate in the development of this plan through both oral and written comments. A copy of the Citizen Participation Plan is included as Appendix I.

Following adoption of the plan by the Camden County Board of Commissioners, it was submitted to the CRC for certification. Certification of the plan was achieved on _____, 2004.

SECTION II. HISTORY

Camden was settled around 1650 or perhaps even earlier, the first residents drifting down from Virginia and establishing themselves on both sides of the Pasquotank River. The first major settlements developed around four creeks – Raymond's, Sawyer's, Areneuse, and Joy's. Dense undergrowth and swampy bottomlands made passable roads impossible; therefore, travel was mainly accomplished through the waterways.

When Camden County was still part of Pasquotank County, a ferry was used to cross the Pasquotank River. During the Revolutionary Period, a charter was granted to Lemuel Sawyer, Jr., to operate a ferry from a point near Camden Courthouse, where the river was only about 200 yards wide. This ferry continued to operate until around 1911, when a bridge was constructed across the river.

Since some of the early settlers came from localities in England where watermills were in operation, this method of grinding grain was attempted here. Because the streams were sluggish, the mills were not very efficient. Much more satisfactory were the windmills located on bluffs along the banks of the broad Pasquotank River.

During the Revolution, Camden County furnished more soldiers to the cause of freedom than any other northeastern county – 416 officers and men. Brigadier-General Isaac Gregory was wounded and his horse shot from under him at the battle of Camden in South Carolina. His services to his state did not end with the war. He was elected once to the House of Commons and re-elected successively to the State Senate for the next eight years.

At the beginning of the war, the task of organizing and assembling troops of the continental army in eastern North Carolina was assigned to Colonel Gideon Lamb, who also saw much active service around Brandywine and Germantown. His son, Abner, a lieutenant, was wounded at the battle of Eutaw Springs. Colonel Selby Harney served gallantly throughout the war and was severely wounded at the siege of Charleston. Captain John Forbes, leading a company of Camden men, was killed at the Battle of Guilford Courthouse in 1781.

Other distinguished men of this period were Colonel Peter Dauge, Joseph Jones, Colonel Dempsey Burgess, and the Reverend Henry Abbott. Colonel Dauge performed valuable service in assembling supplies for the colonial troops. Jones, Abbott, and Burgess were influential figures in the state legislature during the Revolution. Colonel Burgess and his brother-in-law, Lemuel Sawyer, have the distinction of being the only Camden natives serving as representatives in the US Congress. Colonel Burgess is also remembered locally because he donated the site on which historic Shiloh Baptist Church now stands.

On May 9, 1777, Camden County became a separate county from Pasquotank County and was named in honor of Sir Charles Pratt, first Earl of Camden, England, as a token of gratitude because of his vigorous defense of the colonists in their complaints against the mother country. The new county was too busy with the Revolution to build a courthouse until 1782.

In 1790, General Gregory was appointed by President George Washington to be the first collector of customs for the Port of Camden or "Plank Bridge." This port of entry was on Sawyer's Creek in the Camden community and was a port of considerable maritime activity, bringing commercial benefits to the entire community. Joseph Jones made an attempt to establish a town here called Jonesboro. Wharves and warehouses dotted the banks of the creek to Murden's Landing on the Pasquotank River. However, due to the shallow creek and ships of heavier tonnage being built, the once flourishing trade vanished. The port of entry was moved to Elizabeth City in 1830.

The Dismal Swamp Canal was built in the northern end of the county between the years 1793 and 1805. Dirt removed for the Canal was thrown up to form a bed for a toll road which quickly became the route for a stagecoach line between Norfolk and Elizabeth City. Highway 17, the original Ocean Hiway, now utilizes this roadbed. Building of the Canal brought economic benefits to Camden and South Mills, where mills were erected at one of the locks. Seven men in Camden invested in the Canal Company, buying a total of twelve shares.

On April 19, 1862, a Civil War battle called the Battle of Sawyer's Lane, also known as the Battle of South Mills, was fought near South Mills. Here, Confederate troops fought Union troops attempting to blow up the Dismal Swamp Canal locks. After a brisk battle, the Federal troops withdrew.

SECTION III. REGIONAL SETTING

Camden County is located on the northern edge of the North Carolina Coastal Plain adjacent to the North Carolina – Virginia state line in northeast North Carolina. The county is bounded by Pasquotank and Currituck counties, the Pasquotank and North Rivers, the Albemarle Sound, and Virginia. Map 1 depicts the regional location.

Camden County's location is a key asset for its future economic development. The county is located immediately south of the Chesapeake, Virginia metropolitan area. Downtown Norfolk is only 33 miles from South Mills, 45 miles from Camden, and 52 miles from Shiloh. US 17 is the county's main connection north to the Chesapeake area. US 158 is the main east-west connection through the county. This route leads directly to the North Carolina Outer Banks which are located by road approximately 40 miles east of the county's eastern boundary. However, in a straight line, the Outer Banks lie 20 miles directly east of Camden County. Elizabeth City (2000 population – 17,218) is located immediately west of Camden County. US 17 provides excellent four-lane highway access as far west as Chowan County.

MAP 1 - REGIONAL LOCATION

SECTION IV. CAMDEN COUNTY CONCERNS AND ASPIRATIONS

A. KEY ISSUES

In compliance with the 15A NCAC 7B requirements and the county's Citizen Participation Plan (see Appendix I), Camden County conducted a county-wide meeting on February 27, 2003, to identify issues which are important to the future of the county. The meeting was advertised in The Daily Advance, Elizabeth City, North Carolina on February 15, 2003. In addition, letters were directly mailed to individuals and organizations requesting attendance at the meeting. This meeting was instrumental to the development of this plan, providing a foundation for the development of the document. The following list of key issues is the result of comments received at the February 27, 2003, meeting and actual ranking of the identified issues by those in attendance.

KEY ISSUES	Number Concerned
• Improve Infrastructure	32
▸ Reverse osmosis water treatment plant and waterline project 3	
▸ Development of infrastructure and other needed facilities including the South Mills and Camden Village sewer systems. 4	
▸ Water and Sewer future plans for expansion. 4	
▸ How far is natural gas going to extend. 2	
▸ Focus sewer on core business areas. 9	
▸ Natural Gas in core business areas. 4	
▸ Develop more infrastructure along business corridor. 6	
• Growth	25
▸ Implementation of the county's growth management plan (water & sewer) 5	
▸ Control/restrict growth. 16	
▸ Control of conflicting land uses along the US 17, US 158 and NC 343 highway corridors. 4	
• Better opportunities in education.	18
• Subdivisions	15
▸ More restrictions on land available for subdivisions/mobile home parks. . 11	
▸ More open space for subdivisions. 4	
• Expansion of Parks and Recreation	11
• Impact fees.	11
• Expand major highways.	11
• Select Industry Development (light manufacturing, golf course).	11
• Keep farming areas and developments apart.	10
• More public access to water.	10

KEY ISSUES (continued)	Number Concerned
• More focus on economic development for Camden County.	8
• What direction are we heading in regarding the development of properties on borderline septic systems.	7
• Retirement facilities.	7
• Business geared toward recreation.	6
• Preservation and protection of the Dismal Swamp.	4
• Storm water management.	4
• Focus on working relationships with neighboring counties.	4
• Assessment of water quality and the relationship of land use to water quality.	3
• When will we start to develop commercial properties.	3
• Affordable housing.	3
• Prime Residential (area) Community.	3
• State of Virginia's Highway 17 widening through the Dismal Swamp.	2
• Expansion of development from the Norfolk/Chesapeake urban area.	2
• Shoreline public access needs.	2

Surveys were mailed out to 408 absentee property owners. A total of 62 completed questionnaires were received. Results of the responses to the in-county meeting and absentee property owners were very similar. See Appendix II for a comparison of these results as well as the tabulation of additional questions from the absentee property owners survey.

B. DOMINANT GROWTH-RELATED ISSUES

Camden County's dominant growth-related issues focus on the following:

- Improving infrastructure.

- Controlling growth, especially in northern Camden County from Chesapeake, Virginia expansion and along the US 17 corridor.

- Control of growth along the US 158 and NC 343 corridors.

- Better opportunities in education.

C. CAMDEN COUNTY COMMUNITY VISION

Camden County will be an area of controlled growth designed to maintain its rural and cultural heritage. The County will provide improved infrastructure, quality subdivisions, and expanded recreational opportunities. The county will selectively pursue economic and industrial development, focusing on light industries. Village areas including South Mills, Camden, and Shiloh will be improved and protected. Future development will have as its foundation the preservation of Camden County's quality of life, including its natural resources. Camden County will maintain a quality school system with no overcrowding of schools.

SECTION V. ANALYSIS OF EXISTING AND EMERGING CONDITIONS

A. POPULATION, HOUSING, AND ECONOMY

1. Camden County Permanent Population

a. Region R, North Carolina, and Camden County

North Carolina is divided into 18 regions based on locale for the purpose of coordinating planning efforts between neighboring counties. These designated regions are considered the Council of Governments. Camden County is in Region R along with Chowan, Currituck, Dare, Gates, Hyde, Pasquotank, Perquimans, Tyrrell, and Washington counties. It is useful to compare the growth of Camden County to the other counties within Region R due to their geographic proximity. Table 1 provides a summary of population change and population growth percentages for Region R counties and North Carolina. According to the 2000 US Census, Camden County was one of the three least populated counties in the region.

Table 1
Camden County, Region R, and North Carolina
Total Population and Percentage Change, 1970-2003

	Total Population					Population % Change				
County	1970	1980	1990	2000	**2003 Estimate**	'70-'80	'80-'90	'90-'00	**'00-'03**	**Overall**
Camden	**5,453**	**5,829**	**5,904**	**6,885**	**7,754**	**6.9%**	**1.3%**	**16.6%**	**12.6%**	**42.2%**
Chowan	10,764	12,558	13,506	14,526	**14,410**	16.7%	7.5%	7.6%	**-0.8%**	**33.9%**
Currituck	6,977	11,089	13,736	18,190	**20,612**	58.9%	23.9%	32.4%	**13.3%**	**195.4%**
Dare	6,996	13,377	22,746	29,967	**33,216**	91.2%	70.0%	31.7%	**10.8%**	**374.8%**
Gates	8,525	8,875	9,305	10,516	**10,786**	4.1%	4.8%	13.0%	**2.6%**	**26.5%**
Hyde	5,570	5,873	5,411	5,826	**5,758**	5.4%	-7.9%	7.7%	**-1.2%**	**3.4%**
Pasquotank	26,824	28,462	31,298	34,897	**36,385**	6.1%	10.0%	11.5%	**4.3%**	**35.6%**
Perquimans	8,352	9,486	10,447	11,368	**11,713**	13.6%	10.1%	8.8%	**3.0%**	**40.2%**
Tyrrell	3,806	3,975	3,856	4,149	**4,210**	4.4%	-3.0%	7.6%	**1.5%**	**10.6%**
Washington	14,039	14,801	13,997	13,723	**13,479**	5.4%	-5.4%	-2.0%	**-1.8%**	**-4.0%**
Region R	97,306	114,325	130,206	150,047	**158,323**	17.5%	13.9%	15.2%	**5.5%**	**62.7%**
North Carolina	5,084,442	5,880,095	6,632,448	8,049,313	**8,417,255**	15.6%	12.8%	21.4%	**4.8%**	**65.5%**

Source: US Census Bureau.

From 1970 to 2000, the county's population increased by 26.3% from 5,453 to 6,885. By comparison, the Region R total population increased by 54.2% while the total state population increased by 58.3%. Within three exceptions, all Region R counties had higher rates of growth.

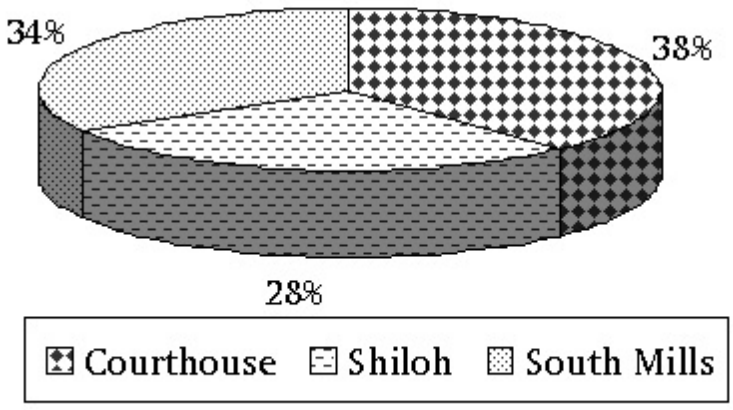
Table 2 provides a summary of population growth by township from 1970 to 2000. The Courthouse Township has been the fastest growing township with a 1990 to 2000 increase of 24.2%. However, the county's population is fairly evenly distributed among the three townships. It is expected that in the next five to ten years the rate of growth of the South Mills Township population will accelerate. Graph 1 provides a visual representation of the 2000 population distribution by township.

Table 2
Camden County
Population Growth by Township

Township	1970	1980	1990	2000	2000 % of Total	'90-'00 Growth
Courthouse	1,848	2,046	2,115	2,626	38.1%	24.2%
Shiloh	1,676	1,717	1,731	1,941	28.2%	12.1%
South Mills	1,929	2,066	2,087	2,318	33.7%	11.1%
Camden County	5,453	5,829	5,933	6,885	100.0%	16.0%

NOTE: 2003 data is not available.
Source: US Census Bureau.

Graph 1
Camden County
Population by Township, 2000



Much of Camden County's population growth during the 1990s has been the result of net in-migration. Map 2 summarizes North Carolina Population Growth from 1990 to 2000. Camden County is described as experiencing modest growth with net in-migration. In 2003, the North Carolina Office of State Planning estimated the county's net migration at +12.2%.

b. Camden County Population Profile

Table 3 provides a summary of the Camden County and North Carolina populations by racial composition from 1970 to 2000. In contrast to North Carolina's total population and the majority of eastern North Carolina counties, Camden County's white population has increased while its black population has declined. From 1970 to 2000, the white population as a percentage of the county's total population increased from 62.8% to 80.6%. By comparison, North Carolina's white population as a percent of the state's total population declined from 76.8% to 72.1%. From 1970 to 2000, the Camden County black population as a percentage of total population significantly declined from 37.0% to 17.3%. There are no significant non-white or non-black racial groups in Camden County. Table 3 also indicates that the county's male/female population is almost evenly split with 49.6% male and 50.4% female.

Table 3
Camden County
Racial Composition, 1970-2000

	Camden County		North Carolina	
	Total	Percentage	Total	Percentage
1970 Population*	**5,453**	**100.0%**	**5,082,059**	**100.0%**
White	3,426	62.8%	3,901,767	76.8%
Black	2,019	37.0%	1,126,478	22.2%
Other	8	0.2%	53,814	1.0%
1980 Population*	**5,829**	**100.0%**	**5,881,766**	**100.0%**
White	3,938	67.5%	4,460,570	75.8%
Black	1,876	32.2%	1,319,054	22.4%
Other	15	0.3%	102,142	1.8%
1990 Population**	**5,904**	**100.0%**	**6,628,637**	**100.0%**
White	4,388	74.3%	5,011,248	75.6%
Black	1,481	25.0%	1,455,340	22.0%
Asian or Pacific Islander	9	0.2%	50,395	0.8%
American Indian, Eskimo, Aleut	21	0.4%	82,606	1.2%
Other	5	0.1%	29,048	0.4%

(continued on next page)

Table 3 (continued)

	Camden County		North Carolina	
	Total	Percentage	Total	Percentage
2000 Population[***]	**6,885**	**100.0%**	**8,049,313**	**100.0%**
White	5,551	80.6%	5,804,656	72.1%
Black or African American	1,189	17.3%	1,737,545	21.6%
Asian or Pacific Islander	41	0.6%	117,672	1.5%
American Indian and Alaska Native	29	0.4%	99,551	1.2%
Some Other Race	9	0.1%	186,629	2.3%
Two or More Races	66	1.0%	103,260	1.3%
Hispanic or Latino (of any race)[****]	49	0.7%	378,963	4.7%
Male	3,414	49.6%	3,942,695	49.0%
Female	3,471	50.4%	4,106,618	51.0%

[*]Racial breakdown available for the 1970 and 1980 Census.
[**]Racial breakdown available for the 1990 Census.
[***]Racial breakdown available for the 2000 Census.
[****]In the 2000 Census, the Hispanic race was not considered an ethnic group. However, this is the number of individuals who reported being of Hispanic origin.
NOTE: 2003 data is not available.
Source: 2000 US Census.

Table 4 provides a summary of Camden County's 1990 and 2000 population by age distribution. From 1990 to 2000, the county's median age increased from 35.2 to 39.1. However, the percent of total population 65 years old or older decreased slightly from 14.1% in 1990 to 13.5% in 2000. The increase in the median age is primarily the result of an increase in the 35 to 64 year old population. A continuation of net in-migration may slow the rate of increase in the age of the population. In both 1990 and 2000, the county's median age was higher than the median age for the entire state of North Carolina. Graph 2 provides a summary of the county's 2000 population age distribution. Clearly, the largest age group was the 35 to 54 year old age group.

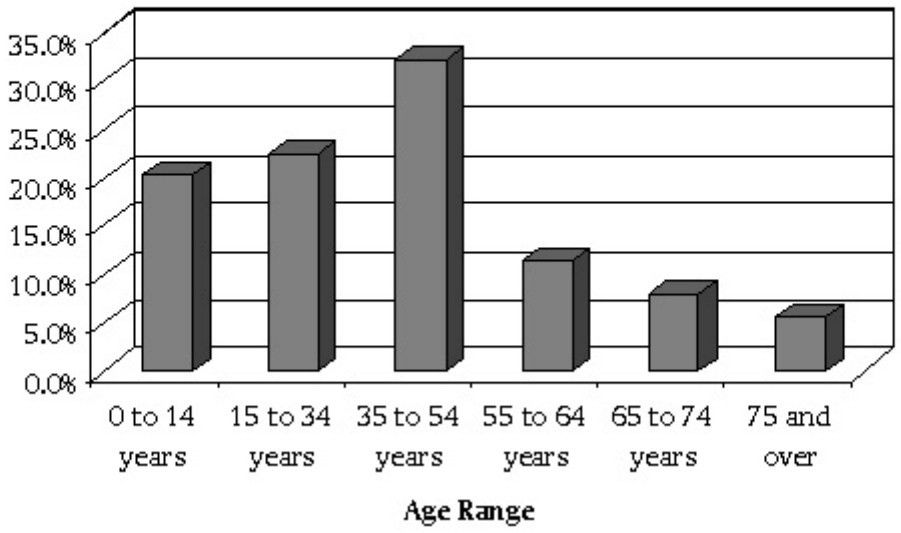
MAP 2 - NORTH CAROLINA POPULATION GROWTH

Table 4
Camden County and North Carolina
Age Composition, 1990 and 2000

	Camden County				North Carolina			
	1990 Total	1990 % of Total	2000 Total	2000 % of Total	1990 Total	1990 % of Total	2000 Total	2000 % of Total
0 to 14 years	1,176	19.9%	1,398	20.3%	1,335,416	20.1%	1,653,429	20.5%
15 to 34 years	1,708	28.9%	1,559	22.7%	2,195,661	33.1%	2,330,854	29.0%
35 to 54 years	1,561	26.4%	2,217	32.2%	1,706,316	25.7%	2,372,270	29.5%
55 to 64 years	630	10.7%	778	11.3%	586,903	8.9%	723,712	9.0%
65 to 74 years	517	8.8%	551	8.0%	483,105	7.3%	533,777	6.6%
75 and over	312	5.3%	382	5.5%	321,236	4.9%	435,271	5.4%
Total population	5,904	100.0%	6,885	100.0%	6,628,637		8,049,313	100.0%
Median age	35.2		39.1		31.3		35.3	

Source: 2000 US Census.

Graph 2
Camden County
Age Composition, 2000



Source: 2000 US Census.

Camden County compares favorably with North Carolina for those individuals having graduated from high school and those having received at least some partial college education or Associate degree. Table 5 provides a summary of the county's 2000 educational attainment based on persons 25 years old or older. The county lags behind the state in the percent of its population which has received a Bachelor's degree or Graduate/Professional degrees.

Table 5
Camden County and North Carolina
Education Attainment, 2000
Based on Persons 25 Years Old or Older

	Camden County		North Carolina	
	Total	% of Total	Total	% of Total
Less than 9th grade	297	6.2%	413,495	7.8%
Ninth to twelfth grade, no diploma	559	11.7%	741,229	14.0%
High school graduate	1,621	34.0%	1,502,978	28.4%
Some college, no degree	1,144	24.0%	1,080,504	20.5%
Associate degree	376	7.9%	358,075	6.8%
Bachelor's degree	522	10.9%	808,070	15.3%
Graduate/Professional degree	251	5.3%	378,643	7.2%
Total population 25 years and over	4,770	100.0%	5,282,994	100.0%

Source: 2000 US Census.

c. Population Summary

The following provides a summary of the significant demographic factors:

- From 1970 to 2000, Camden County's population increased by 26.3%, one of the four lowest rates of growth in Region R.
- Currently, the county's population is almost evenly distributed amongst the county's three townships.
- The county has experienced net in-migration.
- From 1970 to 2000, Camden County's minority population has declined.

- The county's male/female population is almost evenly divided.

- From 1970 to 2000, the median age of the county's population increased.

- Through high school and Associate degree level, the county ranks ahead of the state in educational attainment. However, for Bachelor's and Professional degree attainment, the county ranks behind the state.

- The population trends estimated through 2003 are expected to continue through 2004.

2. Housing

a. Housing Occupancy and Tenure

According to the 2000 Census, Camden County contains a total of 2,973 dwelling units, an increase of 507 units over the 1990 Census. Approximately 10.5% of these units are vacant, which is in line with the state average. Out of the 89.5% that are occupied, 74.6% are owner-occupied and 14.9% are rental properties. The percentage of owner-occupied housing in the county is significantly higher than the state average. From 1999 to 2003, a total of 762 residential building permits were issued. All permits did not necessarily result in occupancy of housing units. The building permit data is summarized on page 75. Table 6 provides a summary of housing occupancy and tenure. Seasonal housing/population is discussed on page 30.

Table 6
Camden County and North Carolina
Housing Occupancy and Tenure, 1990 and 2000

	Camden County				North Carolina
	1990		2000		2000
	Total	% of Total	Total	% of Total	% of Total
Total Housing Units	2,466	100.0%	2,973	100.0%	100.0%
Vacant	286	11.6%	311	10.5%	11.1%
Occupied:	2,180	88.4%	2,662	89.5%	88.9%
Owner-Occupied*	1,764	71.5%	2,219	74.6%	61.6%
Renter-Occupied*	416	16.9%	443	14.9%	27.3%
Mean Monthly Housing Cost:					
With a Mortgage	$995				$1,121
Without a Mortgage	$252				$ 282

*Indicates breakdown of occupied household types.
Source: US Census Bureau.

b. Structure Age

Table 7 indicates that in 2000, the median age of structures in Camden County was 18. In addition, approximately 44% of the county's structures were built prior to 1970. Based on the table below, residential development has remained steady in the county. Approximately 27% of the residential structures in the county have been built since 1990.

Table 7
Camden County
Housing Structure, 2000

Year	Number of Structures	% of Total
1999 to March, 2000	165	5.5%
1995 to 1998	363	12.2%
1990 to 1994	284	9.6%
1980 to 1989	407	13.7%
1970 to 1979	459	15.4%
1960 to 1969	377	12.7%
1940 to 1959	562	18.9%
1939 or earlier	356	12.0%
Total Structures	2,973	100.0%
Median Year Structure Built	1974	

Source: US Census Bureau.

c. Housing Conditions

Table 8 provides a summary of existing household size, as well as the percentage of units lacking general household needs. The statistics in this table provide a good summary of the condition of the county's housing stock.

Homes in Camden County are significantly larger than the state overall. The percentage of homes in the county with 3+ bedrooms is 73.6%, compared to 60.8% for the state overall. The percent of homes lacking complete kitchen facilities is slightly lower than state averages, while the percentage of homes lacking complete plumbing facilities is slightly higher than the state average.

Table 8
Camden County and North Carolina
Housing Conditions

	Camden County	North Carolina
Average Rooms Per Unit	6.1	5.5
Percent with no bedroom	0.9%	1.1%
Percent with 3+ bedrooms	73.6%	60.8%
Percent lacking complete kitchen facilities	0.6%	1.1%
Percent lacking complete plumbing	1.8%	1.1%
Percent occupied with telephones	86.7%	86.2%

Source: US Census Bureau.

d. Single and Multi-Family Units

Table 9 provides the number of single-family housing units versus multi-family units and the number of mobile homes in Camden County. Camden County has a substantially greater amount of single-unit detached housing (80.3%) than the state average (64.4%), while the percentage of multi-family housing is much lower than the state. The percentage of residential structures in the county comprised of mobile homes is comparable to the state average.

Table 9
Camden County and North Carolina
Units in Structure and Mobile Home Count, 2000

	Camden County		North Carolina
Units in Structure	Total	% of Total	% of Total
1-unit, detached	2,386	80.3%	64.4%
1-unit, attached	15	0.5%	3.0%
2 units	12	0.4%	2.5%
3 or 4 units	8	0.3%	3.2%
5 to 9 units	24	0.8%	4.3%
10 to 19 units	10	0.3%	3.2%
20 units or more	0	0.0%	2.9%
Mobile home	499	16.8%	16.4%
Boat, RV, van, etc.	19	0.6%	0.2%
Total	2,973	100.0%	100.0%

Source: US Census Bureau.

e. General Housing

Camden County has participated in several housing rehabilitation programs over the years. The most recent funding came in the form of a CDBG Scattered Site Housing Program. In this project, ten homes will be treated at a cost of $29,999 apiece. Other recent projects undertaken by the county were an Infrastructure and Housing rehabilitation project to address the Bloodfield area, and treatment following Hurricane Floyd. The Bloodfield area project served fifty properties, and also involved the widening of several roads to accommodate infrastructure upgrades. Subsequent to Hurricane Floyd, seven properties were acquired by the county through the state's HMGP Buyout Program, and several other properties were repaired through the Repair and Rehabilitation Grant Program.

f. Housing Summary

- According to the 2000 US Census, Camden County contains a total of 2,973 dwelling units, of which approximately 10.5% are vacant. Out of the 89.5% occupied units, 74.6% are owner-occupied and 14.9% are rental properties.

- The median age of all residential structures in the county is 18 years, while approximately 44% of all housing units were built prior to 1970.

- The percentage of homes in Camden County with 3+ bedrooms is 73.6%, compared to 60.8% for the state overall.

- Camden County has a substantially greater amount of single-unit detached housing (80.3%) than the state average (64.4%).

- The percentage of mobile homes in the county is comparable to the state average.

- The building permit activity shown through 2003 is expected to continue in 2004, and maintain at least 100 to 150 additional residential permits per year.

3. Employment and Economy

a. Introduction (General Economic Indicators)

Camden County ranks in the lower percentile of NC counties in nearly all economic categories. This can mainly be attributed to the size and rural nature of the county. These two factors attribute to a smaller population size, 97th out of 100 North Carolina counties, and in turn limited industrial development. Table 10 provides a summary of economic indicators for Camden County and the State of North Carolina. Due to the lack of available data, the figures provided in Table 10 are from several different years. Camden County ranks in the lower 50th percentile in all three key economic indicators at the state level: gross retail sales, per capita income, and average annual wage. The unemployment rate for the county is significantly lower than the state overall. The poverty rate is slightly lower than the state, while the percentage of persons in the workforce is comparable to the state level.

Table 10
Camden County and North Carolina
Summary of Economic Indicators

	Year	Camden County	NC Rank
Gross Retail Sales (per capita)	FY00-01	$27,647,667	99
Per Capita Income	1999	$21,115	61
Average Annual Wage	2000	$21,408	63
		Camden County	**North Carolina**
Unemployment Rate	2000 Annual	2.5%	*
Unemployment Rate	November 2002	2.8%	5.5%**
% of Population in Labor Force	2000	49.2%	49.4%
Active Job Applicants	2001	336	*
Poverty Rate	2000	10.1%	12.3%

*North Carolina comparison is not applicable.
**State unemployment rate is for 2001.
Source: NC Department of Commerce.

b. Household Income

Household Income is an effective way to evaluate the overall wealth of an area. Table 11 provides the number of individuals within varying income brackets, and how these figures compare to state percentages. Camden County's household incomes are very similar to state percentages. The number of low-income households is lower than many rural counties in the state, with 66% of households making over $35,000.

Table 11
Camden County
Household Income, 2000

	Camden County		North Carolina
	Total	% of Total	% of Total
Less than $10,000	123	6.0%	5.9%
$10,000 to $14,999	81	4.0%	4.6%
$15,000 to $24,999	155	7.6%	11.8%
$25,000 to $34,999	332	16.3%	13.1%
$35,000 to $49,999	419	20.5%	18.7%
$50,000 to $74,999	477	23.4%	22.9%
$75,000 to $99,999	264	12.9%	11.1%
$100,000 to $149,999	156	7.7%	7.6%
$150,000 to $199,999	33	1.6%	2.1%
$200,000 or more	0	0.0%	2.2%
Total Families	2,040	100.0%	100.0%

Source: 2000 US Census.

c. Employment By Industry

Table 12 provides a summary of employment by industry in Camden County for those persons 16 years and over. The leading employment industries are education, health, and social services (21.6%), and retail trade (14.3%). The industries with the least employment are wholesale trade (0.3%), and information (0.8%).

Table 12
Camden County
Employment By Industry, 2000

Industry	# Employed	% Employed
Agriculture, Forestry, Fishing, and Mining	116	3.7%
Construction	265	8.6%
Manufacturing	317	10.2%
Wholesale Trade	8	0.3%
Retail Trade	443	14.3%
Transportation, Warehousing, and Utilities	238	7.7%
Information	25	0.8%
Finance, Insurance, Real Estate, and Rental and Leasing	149	4.8%
Professional, Scientific, Management, Administrative, and Waste Management Services	240	7.7%
Education, Health, and Social Services	669	21.6%
Arts, Entertainment, Recreation, Accommodation, and Food Services	94	3.0%
Other Services (except Public Administration)	163	5.3%
Public Administration	372	12.0%
Total Persons Employed 16 Years and Over	3,099	100.0%

Source: US Census Bureau.

It should be noted that the agriculture, forestry, fishing, and mining employment data that has been provided is somewhat misleading because the figures reflect insured employment and do not include many seasonal, migratory workers. Although the exact number of individuals employed in these industries is unknown, this sector of industry only employs a small number of individuals within Camden County. Beyond these figures, there is no quantitative method to track seasonal employment. Although farming is not a large employer within the county, it is a significant contributor to the county's economy. Table 13 provides a summary of agricultural data for Camden County.

Table 13
Camden County
Agricultural Data

Agriculture Cash Receipts (2002)	Dollars	Rank
Livestock	$995,000	92
Crops	$15,432,000	65
Total	$16,427,000	83

Census of Agriculture (1997)	
Number of Farms	76
Total Land in Farms, Acres	51,685
Average Farm Size, Acres	680
Harvested Cropland, Acres	46,865
Average Age of Farmers	56
Average Value of Farm and Buildings	$1,053,186
Market Value of all Machinery and Equipment	$18,149,000
Total Farm Production Expense	$14,455,000

Crops (2001)	Acres Harv.	Yield	Production	Rank
Tobacco, lbs.	*	*	*	*
Cotton, 480 lb. bales	850	960	1,700	45
Soybeans, bu.	27,700	39	1,062,000	16
Corn, bu.	17,100	134	2,290,000	13
Corn for Silage, tons	*	*	*	*
Peanuts, lbs.	*	*	*	*
Small Grains:				
Wheat, bu.	11,700	46	640,000	8
Barley, bu.	*	*	*	*
Oats, bu.	*	*	*	*
Sweet Potatoes, cwt.	*	*	*	*
Irish Potatoes, cwt.	3,300	205	669,000	2
All Hay, tons	*	*	*	*
Sorghum, bu.	200	75	15,000	11

Livestock	Number	Rank
Hogs and Pigs (December 1, 2001)	3,200	55
Cattle (January 1, 2001)	12,000	30
Beef Cows (January 1, 2002)	6,200	28
Milk Cows (January 1, 2002)	1,000	20
Equine	1,500	*
Broilers Produced (2001)	*	*
Turkeys Raised (2001)	*	*
All Chickens (December 1, 2001)	*	*

NOTE: Entries designated with an asterisk (*) were not published if there were fewer than 50 harvested acres of a specific crop, 500 hogs, 200 beef or milk cows, 500 total cattle, 200,000 broilers, 300,000 turkeys, or 5,000 chickens in the county.
Source: NC Department of Agriculture.

Camden County ranks 83 in total agricultural production within North Carolina. This low ranking is slightly skewed due the county's low rank (92) in livestock production. The county is the second largest producer of Irish Potatoes in the state, and also produces a significant amount of the state's wheat and sorghum.

d. Earnings By Industry

Table 14 gives an overview of the total earnings by industry within Camden County. State and local government has been a strong contributor to the county's economy, making up 26.1% of total earnings. Other top industries include Professional Services (23.7%), Retail Trade (10.2%), and Farming (9.7%). Camden County has experienced a significantly higher percentage (9.7%) of earnings in the farm industry than North Carolina (1.45%). State and local government earnings in Camden County have also been higher (26.1%) than North Carolina averages (11.5%).

Table 14
Camden County
Earnings by Industry, 2000

Industry	Earnings in Millions	% of Total
Farming	2.02	9.7%
Agricultural Services, Other	0.20	1.0%
Mining	0.00	0.0%
Construction	1.78	8.6%
Manufacturing	1.79	8.6%
Transportation, Communication, and Public Utilities	0.98	4.7%
Wholesale Trade	0.95	4.6%
Retail Trade	2.12	10.2%
Finance, Insurance, Real Estate	0.11	0.5%
Professional Services	4.92	23.7%
Federal Civilian Government	0.34	1.6%
Federal Military	0.13	0.6%
State and Local Government	5.43	26.1%
Total Earnings	20.77	100.0%

Source: Woods and Poole CEDDS.

Table 15 provides a listing of average weekly wages by industry. The categories for industry are different than the ones listed in Table 14 because the information was obtained from different data sources. The industry yielding the highest wages in Camden County is Finance, Insurance, and Real Estate ($679.27). Across the board, wages in Camden County are significantly lower than state averages, with the exception of Agriculture where the county's average weekly wage is $176.24 higher than the state average.

Table 15
Camden County
Wages by Industry, 2000

	Average Weekly Earnings	
Industry	Camden County	North Carolina
Agriculture	$559.24	$383.00
Construction	$387.94	$571.00
Finance, Insurance, Real Estate	$679.27	$844.00
Government	$571.81	$621.00
Manufacturing	$441.13	$689.00
Retail Trade	$227.28	$334.00
Wholesale Trade	$606.20	$733.00
Service	$502.95	$550.00
Transportation, Communications, Public Utilities	$541.09	$757.00

Source: NC Department of Commerce.

e. Employment Commuting Patterns

According to the 2000 US Census, only twenty-four percent (24%) of Camden County's working age population is employed within Camden County. A majority of the citizens travel to work outside of the county, primarily to Pasquotank County to the west and the Tidewater Virginia region to the north.

Currently, twenty-two percent (22%), or 700 of the county's 3,151 employed citizens are commuting to the Tidewater Virginia region for employment. Municipalities providing job opportunities within this region are comprised of: Chesapeake, Newport News, Norfolk, Portsmouth, Suffolk, Virginia Beach, and Williamsburg. Due to the significant number of commuters traveling to this area, there is an increased impact on traffic flow along US

Highway 17. Tables 16 and 17 provide a summary of travel times and work destinations for the citizens of Camden County.

Table 16
Camden County
Travel Times to Work

Travel Time	Total	% of Total
Less than five minutes	96	3.1%
5 to 9 minutes	214	7.0%
10 to 14 minutes	298	9.8%
15 to 19 minutes	478	15.6%
20 to 24 minutes	437	14.3%
25 to 29 minutes	177	5.8%
30 to 34 minutes	359	11.8%
35 to 39 minutes	60	1.9%
40 to 44 minutes	118	3.9%
45 to 59 minutes	314	10.3%
60 to 89 minutes	345	11.3%
90 minutes or more	159	5.2%
Total	3,055	100.0%
Mean travel time: 32.4 minutes		

Source: 2000 US Census.

Table 17
Camden County
Travel Times – Commuter Destinations

Work Destination	Commuters	% of Total
Bertie County	12	0.4%
Camden County	724	23.7%
Chowan County	18	0.6%
Currituck County	169	5.5%
Dare County	90	2.9%
Hyde County	12	0.4%
Pasquotank County	1,249	40.9%
Perquimans County	43	1.4%
Wake County	6	0.2%
Washington County	24	0.8%

Table 17 (continued)

Work Destination	Commuters	% of Total
Chesapeake, VA	180	5.9%
Newport News, VA	9	0.3%
Norfolk, VA	269	8.8%
Portsmouth, VA	110	3.6%
Suffolk, VA	12	0.4%
Virginia Beach, VA	98	3.2%
Williamsburg, VA	9	0.3%
Elsewhere	21	0.7%
Total	3,055	100.0%

Source: 2000 US Census.

f. Industries

Camden County is extremely limited in terms of industrial development. The following table lists all industrial employers within the county. Again, this lack of industrial growth can be attributed to a small overall workforce and geographical location.

Table 18
Camden County
Industries

Company	Township	Product	Employees	Year Established
Meiggs, WE & Sons Logging	Camden	Logging	12	
Ambrose Signs Company	Camden	Signs and advertising	12	1945
Dunavant's Welding and Steel Company	Camden	Fabricated structural steel	5	1973
Atlantic Screenprint	South Mills	Automotive trimmings	4	1976
Southern Woodworks Cabinetry	South Mills	Cabinets	1	2000

Source: NC Department of Commerce.

g. Employment and Economy Summary

- Camden County ranks in the lower 50th percentile in all three of the key economic indicators at the state level: gross retail sales, per capita income, and average annual wage.

- The unemployment rate for the county as of November 2002 (2.8%) is significantly lower than the state average (5.5%).

- The poverty rate is slightly lower than the state, while the percentage of persons in the workforce is comparable to the state overall.

- The number of low-income households in Camden County is lower than many rural counties in the state, with 66% of households making over $35,000.

- The leading employment industries in the county are education, health, and social services employing 21.6% of the population, and retail trade at 14.3%. The industries employing the least number of individuals are wholesale trade (0.3%) and information (0.8%).

- Camden County ranks 83 in total agricultural production within North Carolina. This low ranking is slightly skewed due to the county's low rank (92) in livestock production.

- The industries in the county posting the highest earnings are state and local government accounting for 26.1% of total earnings, professional services at 23.7%, and retail trade at 10.2%.

- Across the board, wages in Camden County are significantly lower than state averages, with the exception of agriculture. The county's average weekly wage in this sector is $176.24 higher than the state average.

- Nearly forty-five percent (45%) of Camden County's working age population commutes thirty minutes or more to work daily.

- Forty-one percent (41%) of working age citizens within Camden County commute to Pasquotank County for their occupation.

4. Population Projections

Table 19 provides Camden County population projections through 2015. These projections were prepared by the North Carolina Office of State Planning. According to those projections, Camden County is expected to have the third highest rate of growth within Region R through 2015. This reflects the influx of growth which is expected from the Chesapeake metropolitan area. By 2015, the county's total population is expected to have increased by approximately 1,500 people.

Table 19
Region R Population Projections, 2000-2015

Location	2000	**2003 Estimate**	2005	2010	2015	% Change '00-'15
Camden	6,885	**7,754**	7,455	7,905	8,414	22.2%
Chowan	14,526	**14,410**	14,929	15,448	15,919	9.6%
Currituck	18,190	**20,612**	20,591	22,644	24,917	37.0%
Dare	29,967	**33,216**	33,697	36,681	39,868	33.0%
Gates	10,516	**10,786**	10,960	11,516	11,991	14.0%
Hyde	5,826	**5,758**	5,922	6,141	6,267	7.6%
Pasquotank	34,897	**36,385**	36,325	37,864	39,373	12.8%
Perquimans	11,368	**11,713**	11,811	12,127	12,482	9.8%
Tyrrell	4,149	**4,210**	4,291	4,460	4,576	10.3%
Washington	13,723	**13,479**	13,457	13,285	13,039	-5.0%
Region R Totals	150,047	**158,323**	159,438	168,071	176,846	17.9%
North Carolina	8,049,313	**8,417,255**	8,783,752	9,491,372	10,226,897	27.1%

Source: North Carolina Office of State Planning.

From 1990 to 2000, the seasonal housing units in Camden County only increased from 74 to 76. It is difficult, if not impossible, to forecast increases in seasonal housing. However, it is believed that increased development pressure from the Chesapeake metropolitan area may result in increased seasonal housing. It is assumed that an additional two seasonal houses will be constructed in each of the five year periods ending 2005, 2010, and 2015.

According to a study prepared by East Carolina University of recreational populations for North Carolina coastal communities ("Characterization of Baseline Demographic Trends in the Year-Round and Recreational Populations in the Albemarle Pamlico Estuarine Study Area," Paul D.

Tschetter, Greenville NC; East Carolina University, 1987), a reasonable average number of persons per household occupying seasonal housing units is 4.5. This average occupancy was utilized to forecast peak seasonal population. Peak seasonal population assumes that on the peak day all seasonal units are occupied. Table 20 provides a summary of permanent and peak seasonal population forecasts.

In an effort to address population increase and its impact on the Camden County School System, the Camden County Board of Education hired a consultant to establish detailed demographic projections regarding population and housing. These estimates utilized several different statistical methodologies that resulted in a wide range of outcomes. For the purposes of this plan, all demographic projections have come from the North Carolina Office of State Planning. For comparison purposes, the report compiled for the Camden County Board of Education has been attached as Appendix VII.

Table 20
Camden County
Permanent and Peak Seasonal Population Forecast, 2000-2015

	2000	2005	2010	2015
Permanent Population*	6,885	7,455	7,905	8,414
Peak Seasonal Population**	342 (76 units)	351 (78 units)	360 (80 units)	369 (82 units)
Total	7,227	7,806	8,265	8,783

Source: *NC Office of State Planning; **Holland Consulting Planners, Inc. (April, 2003).

B. NATURAL SYSTEMS ANALYSIS

1. Mapping and Analysis of Natural Features

a. Topography/Geology

Camden County is located on the North Carolina/Virginia state line in the northeastern section of the state. It is bordered by Pasquotank and Currituck counties. Camden County consists of 150,557 acres, or roughly 242 square miles. Elevation in the county ranges from near sea level to 24 feet above sea level at the western edge of the Great Dismal Swamp. The Pasquotank River runs along the southwestern border of the county and the North River runs along the southeastern border of the county. The forest growth consists chiefly of old field pine, post oak, white oak, red oak, black oak, red maple, poplar, hickory, and a few birch.

b. Climate

In Camden County, summers are hot and generally humid because of moist, maritime air, but sea breezes often times cool coastal areas. Winters are cool with short cold periods mainly because the mountains to the west protect the area against many cold waves. Precipitation is evenly distributed throughout the year and is adequate for all crops. Snow rarely occurs in Camden County.

In winter, the average temperature is 42 degrees Fahrenheit and the average daily minimum temperature is 32 degrees. The lowest temperature on record, which occurred on January 13, 1962, is 4 degrees. In summer, the average temperature is 77 degrees and the average daily maximum temperature is 86 degrees. The highest recorded temperature, which occurred on July 23, 1952, is 105 degrees.

The total average annual precipitation is about 49 inches. Of this, 27 inches, or about 55 percent, usually falls in April through September. The growing season for most crops falls within this period. In 2 years out of 10, the rainfall in April through September is less than 22 inches. The heaviest 1-day rainfall during the period of record was 6.7 inches on October 20, 1968. Thunderstorms occur on about 44 days each year.

The average seasonal snowfall is about 2 inches. However, Camden County received 15-20 inches of snow in January 2003.

The average relative humidity in midafternoon is about 65%. Humidity is higher at night, and the average at dawn is about 80%. The sun shines 60% of the time during daylight hours in summer and about 50% in winter. The prevailing wind is from the southwest. Average windspeed is highest, 13 miles per hour, in winter.

c. Flood Hazard Areas

Based on the Flood Insurance Rate Maps (FIRMS) for Camden County, approximately sixty-seven percent (67%) of the county is located in a flood hazard area. The new flood maps were established under the North Carolina Flood Mapping Program, and were adopted by Camden County on October 5, 2004.

The locations of flood zone areas within the county are shown on Map 3. Twenty-one percent (21%) of the county falls within an A flood zone, approximately forty percent (40%) falls within an AE zone, approximately one percent (1%) within the AEFW or Floodway zone, and five percent (5%) within the Shaded X zone. Additionally, roughly three percent (3%) of the county falls within a non-encroachment zone, a newly established Federal Emergency Management Agency (FEMA) floodplain designation. The non-encroachment zone was created to identify low-lying areas where development was previously allowed, but now may not be allowed. In-field assessment of these areas is required. The remaining floodplain designations listed above are defined as follows:

Zone A: Zone A is the flood insurance rate zone that corresponds to the one percent annual chance floodplains that are determined in the Flood Insurance Study by approximate methods of analysis. Because detailed hydraulic analyses are not performed for such areas, no base flood elevations or depths are shown within this zone. Mandatory flood insurance purchase requirements apply.

Zone AE: Zone AE is the flood insurance rate zone that corresponds to the one percent annual chance floodplains that are determined in the Flood Insurance Study by detailed methods of analysis. In most instances, base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone. Mandatory flood insurance purchase requirements apply.

Zone AEFW (Floodway): The floodway is the channel of a stream, plus any adjacent floodplain areas that must be kept free of encroachment so that the one percent annual chance flood can be carried without substantial increases in flood heights.

Zone Shaded X: Zones B, C, and X are the flood insurance rate zones that correspond to areas outside the one percent annual chance floodplain, areas of one percent annual chance sheet flow flooding where average depths are less than one foot, areas of one percent annual chance stream flooding where the contributing drainage area is less than one square mile, or areas protected from the one percent annual chance flood by levees. No base flood elevations or depths are shown in this zone. Flood insurance purchase is not required in these zones.

Acreage figures for portions of Camden County that fall within a FEMA-designated flood zone are provided in Table 21.

MAP 3 - FLOOD HAZARD AREAS

Table 21
Camden County
Flood Hazard Areas

	Camden County (Total Acres 150,557)		Subbasin 03-01-50 (Total Acres 111,880)		Subbasin 03-01-54 (Total Acres 38,677)	
	Acres	% of Total	Acres	% of Total	Acres	% of Total
A	32,038.6	21.3%	31,085.0	27.8%	953.6	2.5%
AE	59,949.8	39.8%	34,135.1	30.5%	25,814.7	66.7%
AEFW	2,119.6	1.4%	2,119.6	1.9%	–	–
Shaded X	7,440.6	4.9%	5,917.2	5.3%	1,523.4	3.9%
TOTAL	101,548.6	67.4%	73,256.9	65.5%	28,291.8	73.1%
Non-encroachment	5,081.8					

* The data included regarding subbasins relates only to the portions of the subbasin located within Camden County.

Source: FEMA and Holland Consulting Planners, Inc. (October, 2004)

The greatest storm surge impact will occur from hurricanes. Map 4 shows the general areas of Camden County which may be affected by hurricane-generated storm surge.

While a considerable amount of Camden County lies within the floodplain, the greatest threat is flooding resulting from storm surge and local ponding of water. Approximately nine percent (9%) of the county's planning jurisdiction would be inundated during a Category One and Category Two hurricane. Thirty-two percent (32%) of the county would be inundated during a Category Three hurricane and seventy-four (74%) inundated during a Category Four and Category Five hurricane.

The Saffir-Simpson Hurricane Scale is a rating system based on hurricane intensity. Within each category is a description of wind speed, storm surge, and estimated damages. Examples of each category are noted.

MAP 4 - STORM SURGE

Category One Hurricane: Winds 74-95 mph. Storm surge generally 4-5 feet above normal. No significant damage to permanent structures. Damage limited to unanchored mobile homes, shrubbery, and trees. Some damage to poorly constructed areas. Limited coastal road flooding and minor pier damage may occur. Hurricanes Allison and Noel of 1995 were Category One hurricanes at peak intensity.

Category Two Hurricane: Winds 96-110 mph. Storm surge generally 6-8 feet above normal. Some roofing material, door, and window damage to buildings. Considerable damage to shrubbery and trees. Some trees blown down. Considerable damage to mobile homes, poorly constructed signs, and piers. Coastal and low-lying escape routes flood 2-4 hours before the arrival of the hurricane center. Small craft in unprotected anchorages break moorings. Hurricane Bertha of 1996 was a Category Two hurricane when it hit the North Carolina coast.

Category Three Hurricane: Winds 111-130 mph. Storm surge generally 9-12 feet above normal. Some structural damage to small residences and utility buildings with a minor amount of curtainwall failures. Foliage blown off trees. Large trees blown down. Mobile homes and poorly constructed signs are destroyed. Flooding near the coast destroys smaller structures with larger structures damaged by floating debris. Terrain lower than five feet above mean sea level may be flooded eight miles inland. Evacuation of low-lying residences within several block of the shoreline may be required. Hurricane Fran of 1996 was a Category Three hurricane.

Category Four Hurricane: Winds 131-155 mph. Storm surge generally 13-18 feet above normal. More extensive curtainwall failures with some complete roof structure failures on small residences. Shrubs, trees, and all signs are blown down. Complete destruction of mobile homes. Extensive damage to doors and windows. Low-lying escape routes may be covered by rising water 3-5 hours before the arrival of the hurricane center. Major damage to the lower floors of structures near the shore. Terrain lower than ten feet above sea level may be flooded, requiring the massive evacuation of residential areas as far inland as six miles. Hurricanes Opal and Hugo were Category Four hurricanes at peak intensity when they struck the Florida and South Carolina coasts, respectively. Both storms eventually passed over the western part of North Carolina. At this time, wind speeds had dropped to tropical storm force winds.

Category Five Hurricane: Winds greater than 155 mph. Storm surge generally greater than 18 feet. Complete roof failure on many residences and industrial buildings. Some complete building failures with small utility buildings blown down. All shrubs, trees, and signs blown down. Complete destruction of mobile homes. Severe and extensive window and door damage. Low-lying escape routes are cut by rising water 3-5 hours before the arrival of the hurricane center. Major damage to lower floors of all structures located less than 15 feet above sea level

and within 500 yards of the shoreline. Massive evacuation of residential areas on low ground within 5-10 miles of the shoreline may be required. Hurricane Gilbert of 1988 was a Category Five hurricane at peak intensity and is the strongest Atlantic tropical cyclone of record. Gilbert passed over Jamaica, the Yucatan Peninsula, and Northern Mexico.

d. Man-made Hazards/Restrictions

There are no significant man-made hazards within Camden County's planning jurisdiction. The EPA requires that facilities report certain chemical substances located on site. Specifically, under this regulatory requirement, facilities with chemicals on the EPA's list of Extremely Hazardous Substances present in a quantity equal to or in excess of their established Threshold Planning Quantity or a 500 pound threshold (whichever number is less), as well as any hazardous chemical present on site in a quantity equal to or greater than 10,000 pounds must be included on an annual report called the Tier II. This report must be submitted by March 1st of each year to the North Carolina Emergency Response Commission, the Local Emergency Planning Committee, and the local fire department with jurisdiction over the reporting facility. Only one facility submitted a Tier II report in Camden County for 2003. That facility is Albemarle Propane located at 149 Highway 158 West, Camden, NC 27921.

The Chesapeake & Albemarle Railroad which traverses the county on its way from Edenton to Chesapeake, Virginia could be considered a potential man-made hazard. The following are facilities that use this railroad:

Table 22
Chesapeake & Albemarle Railroad Customers

Facility Name	Location
Albemarle Builders	Elizabeth City, NC
Albemarle Distribution	Elizabeth City, NC
Royster Clark	Shawboro, NC
Central Grain	Elizabeth City, NC
Universal Forest Products	Elizabeth City, NC
Currituck Grain	Shawboro, NC
Hobbs Implement	Edenton, NC
Lebanon Agricorp	Chesapeake, VA
Lebanon Agricorp	Shawboro, NC
C.A. Perry & Sons	Edenton, NC
Commercial Ready-Mix	Edenton, NC
Coastal Ready-Mix	Moyock, NC

Table 22 (continued)

Facility Name	Location
Roberts Bros.	Shawboro, NC
Southern States	Hertford, NC
United Piece & Die	Edenton, NC
IMC	Elizabeth City, NC
Vulcan Materials	Elizabeth City, NC
F.P. Wood & Son	Camden, NC

Source: Camden County.

e. Soils

A detailed soils survey was issued for Camden County in July 1995. That report, Soil Survey of Camden County, North Carolina, identifies 24 soils series located in the county. The soils series are located on Map 5, and their characteristics are summarized in Table 23.

Twenty-one of the 24 soil series have severe limitations for septic tank usage. The Bojac loamy sand (BoA) and State fine sandy loams (StA and StB) soil types have moderate limitations for septic tank usage but can accommodate conventional septic tank systems. However, these three soils series occupy only small areas, 1.79% of the county's total area.

The soils with moderate limitations for septic tank usage are scattered in the South Mills, Camden, and Shiloh village areas and along NC 343 from South Mills to Camden, and north of US 158 east of Camden.

It is significant that fourteen of the soil series in Camden County are hydric soils. Those fourteen include: Belhaven muck, Cape Fear silt loam, Chowan silt loam, Dorovan muck, Hobonny muck, Hyde silt loam, Nimmo silt loam, Perquimans silt loam, Portsmouth sandy loam, Pungo muck, Roanoke silt loam, Roper muck, Tomotley fine sandy loam, and Wasda muck. A hydric soil is a soil which is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part (anaerobic is defined as a situation in which molecular oxygen is absent from the environment.) These soils may meet the definition of 404 wetland areas if found in combination with certain hydrophytic vegetation and require permitting by the U.S. Army Corps of Engineers' Wilmington Office prior to any disturbance.

MAP 5 - SOIL TYPES

Table 23
Camden County
Soil Series Characteristics

Map Symbol	Soil Series	Slope	Depth to Seasonal High H_2O Table (ft)	Flooding Frequency (Surface)	Dwellings without Basements	Streets & Roads	Septic Tanks	Total Acreage	% of Each Soil
AaA	Altavista fine sandy loam	0-2%	1.5 to 2.5 ft.	none	Moderate: wetness	Moderate: wetness, low strength	Severe: wetness	2,663.65	1.72%
AtA	Augusta fine sandy loam	0-2%	1 to 2 feet	none	Severe: wetness	Moderate: wetness, low strength	Severe: wetness	1,217.27	0.79%
BaA	Belhaven muck	0-2%	0 to 1 foot	none	Severe: wetness, low strength	Severe: wetness	Severe: wetness, percs slowly	12,020.74	7.75%
BoA	Bojac loamy sand	0-3%	4 to 6 feet	none	Slight	Slight	Moderate: wetness	1,831.41	1.18%
CfA	Cape Fear silt loam	0-2%	0 to 1.5 feet	none	Severe: wetness	Severe: low strength, wetness	Severe: wetness, percs slowly	2,940.54	1.90%
ChA	Chapanoke silt loam	0-2%	0.5 to 1.5 feet	none	Severe: wetness	Severe: low strength, wetness	Severe: wetness, percs slowly	1,824.41	1.18%
CoA	Chowan silt loam	0-2%	0 to 0.5 foot	Frequent: very long Nov-Apr	Severe: flooding, wetness	Severe: low strength, wetness, flooding	Severe: flooding wetness, percs slowly	5,352.77	3.45%
DoA	Dorovan muck	0-1%	-0.5 to 1 foot	Frequent: very long Jan-Dec	Severe: subsides, flooding, ponding	Severe: subsides, ponding, flooding	Severe: subsides, flooding, ponding	27,339.97	17.63%
HoA	Hobonny muck	0-1%	-0.5 to 1 foot	Frequent: very long Jan-Dec	Severe: flooding, low strength ponding	Severe: ponding, flooding	Severe: flooding, ponding	1,416.93	0.91%
HyA	Hyde silt loam	0-2%	0 to 1.5 feet	none	Severe: wetness	Severe: low strength, wetness	Severe: wetness, percs slowly	6,422.15	4.14%
MuA	Munden loamy sand	0-2%	1.5 to 2.5 ft.	none	Moderate: wetness	Moderate: wetness	Severe: wetness, poor filter	1,908.59	1.23%
NoA	Nimmo sandy loam	0-2%	0 to 1 foot	none	Severe: wetness	Severe: wetness	Severe: wetness, poor filter	1,787.31	1.15%

Table 23 (continued)

Map Symbol	Soil Series	Slope	Depth to Seasonal High H_2O Table (ft)	Flooding Frequency (Surface)	Dwellings without Basements	Streets & Roads	Septic Tanks	Total Acreage	% of Each Soil
PeA	Perquimans silt loam	0-2%	0 to 1 foot	none	Severe: wetness	Severe: low strength, wetness	Severe: wetness, percs slowly	16,957.04	10.94%
PtA	Portsmouth fine sandy loam	0-2%	0 to 1 foot	none	Severe: wetness	Severe: wetness	Severe: wetness, poor filter	7,159.14	4.62%
PuA	Pungo muck	0-2%	0 to 1 foot	none	Severe: subsides, wetness, low strength	Severe: subsides, wetness, low strength	Severe: subsides, wetness, percs slowly	23,377.44	15.08%
RoA	Roanoke silt loam	0-2%	0 to 1 foot	none	Severe: wetness	Severe: low strength, wetness	Severe: wetness, percs slowly	13,116.60	8.46%
RpA	Roper muck	0-2%	0 to 1.5 feet	none	Severe: wetness	Severe: low strength, wetness	Severe: wetness, percs slowly	5,998.40	3.87%
SeA	Seabrook fine sand	0-2%	2 to 4 feet	none	Moderate: wetness	Moderate: wetness	Severe: wetness, poor filter	795.72	0.51%
StA	State fine sandy loam	0-2%	3 to 5 feet	none	Slight	Moderate: low strength	Moderate: wetness, percs slowly	756.50	0.49%
StB	State fine sandy loam	2-6%	3 to 5 feet	none	Slight	Moderate: low strength	Moderate: wetness, percs slowly	192.27	0.12%
ToA	Tomotley fine sandy loam	0-2%	0 to 1 foot	none	Severe: wetness	Severe: wetness	Severe: wetness, percs slowly	12,985.26	8.37%
Ud	Udorhents loamy	loamy						761.69	0.49%
WdA	Wasda muck	0-2%	0 to 1 foot	none	Severe: wetness	Severe: wetness	Severe: wetness	2,007.31	1.29%
YeA	Yeopim silt loam	0-2%	1.5 to 3.0 ft.	none	Severe: wetness	Severe: low strength	Severe: wetness, percs slowly	2,215.01	1.43%

Source: Soil Survey of Camden County, North Carolina.

f. Water Supply

Water is by far the most abundant natural resource in Camden County. A majority of the water resources in the county are brackish containing varying degrees of salt, and therefore are not usable for consumption. Many Camden County residents still rely on wells for their water supply. Generally, the ground water supplies are as extensive as surface waters. Three stratified aquifers underlie much of the region and contain massive quantities of water. Salt water from water bodies surrounding the county often intrudes onto these aquifers. This can often render portions of these drinking water sources unusable. Over time this has become a significant concern for Camden County.

Large portions of the county are now served by water lines. Water is treated and provided by two water treatment plants in Camden County, the South Mills Water Association Water Treatment Plant and the South Camden Water and Sewer Distillation Reverse Osmosis Water Treatment Plant. The county has plans to extend this service to more county residents in the future. Data summarizing water usage by the county can be found in Section V (D)(6), Analysis of Existing Community Facilities/Services - Water System.

In central Camden County there is a WS-IV water supply watershed. The purpose of the Water Supply Watershed Program is to provide an opportunity for communities to work with the state to strengthen protection of their water supplies. There are five water supply classifications (WS-I to WS-V) that are defined according to the amount and types of permitted point source discharges, as well as requirements to control non point sources of pollution. WS-I provides the highest level of protection and WS-IV provides the least level of protection.

g. Fragile Areas and Areas of Environmental Concern

In coastal North Carolina, fragile areas are considered to include coastal wetlands, ocean beaches and shorelines, estuarine waters and shorelines, public trust waters, complex natural areas, areas sustaining remnant species, unique geological formations, registered natural landmarks, swamps, prime wildlife habitats, areas of excessive slope, areas of excessive erosion, scenic points, archaeological sites, historical sites, and 404 wetlands. While not identified as fragile areas in the 15A NCAC 7H use standards, maritime forests and outstanding resource waters (ORWs) should also be considered fragile areas. The Camden County 15A NCAC 7H Areas of Environmental Concern (AECs) include estuarine waters, estuarine shorelines, public trust areas, and coastal wetlands.

i. Estuarine Waters (AEC)

Estuarine waters are generally those waters found in estuaries, sounds, bays, salt water shorelines, and the Atlantic Ocean within three miles of the shoreline. They are the dominant component and bonding element of the entire estuarine system, integrating aquatic influences from both the land and the sea. The estuarine waters are among the most productive natural environments within Camden County's planning jurisdiction. The waters support the valuable commercial and sports fisheries of the coastal area which are comprised of estuarine dependent species such as menhaden, flounder, and crabs.

ii. Estuarine Shorelines (AEC)

Estuarine shorelines are those non-ocean shorelines that are especially vulnerable to erosion, flooding, or other adverse effects of wind and water. They are intimately connected to the estuary. In shoreline areas not contiguous to waters classified as outstanding resource waters by the Division of **Water Quality**, all land 75 feet leeward from the normal water level are considered to be estuarine shorelines. Development within the estuarine shorelines influences the quality of estuarine life and is subject to the damaging processes of shorefront erosion and flooding.

iii. Public Trust Areas (AEC)

Public trust areas are all waters of the Atlantic Ocean and the lands thereunder from the mean high water mark to the seaward limit of state jurisdiction; all natural bodies of water subject to measurable lunar tides and lands thereunder to the mean high water mark; all navigable natural bodies of water and lands thereunder to the mean high water level or mean water level as the case may be, except privately-owned lakes to which the public has no right of access; all water in artificially created bodies of water containing significant public fishing resources or other public resources which are accessible to the public by navigation from bodies of water in which the public has rights of navigation; and all waters in artificially created bodies of water in which the public has acquired rights by prescription, custom, usage, dedication, or any other means. In determining whether the public has acquired rights in artificially created bodies of water, the following factors shall be considered:

(1) the use of the body of water by the public;
(2) the length of time the public has used the area;
(3) the value of public resources in the body of water;
(4) whether the public resources in the body of water are mobile to the extent that they can move into natural bodies of water;

(5) whether the creation of the artificial body of water required permission from the state; and
(6) the value of the body of water to the public for navigation from one public area to another public area.

These areas are significant because the public has rights in these areas, including navigation and recreation. The public trust areas also support valuable commercial and sports fisheries, have aesthetic value, and are important resources for economic development.

The public trust areas must be determined through in-field analysis and definition.

iv. Coastal Wetlands (AEC)

The coastal wetlands are generally delineated on Map 6, Camden County Wetlands. However, it is emphasized that the specific locations of coastal wetlands can be determined only through on-site investigation and analysis. Coastal wetlands are defined as salt marshes regularly- or irregularly-flooded by tides including wind tides, provided this shall not include hurricane or tropical storm tides. These areas must contain at least one, but not necessarily all of the following marsh plant species: Cordgrass, Meadow Grass, and Salt Reed Grass. The coastal wetlands are vital to the complex food chain found in estuaries. They provide marine nursery areas and are essential to a sound commercial fishing industry. Coastal wetlands also serve as barriers against flood damage and control erosion between the estuary and uplands. Substantial coastal wetland areas are located along Portohonk, Raymond, Cow, Great, Public, Abel, Hunting, Broad, and Little Broad Creeks; a portion of the North River south of Public Creek; and a portion of the north side of Camden Point.

v. Wetlands Defined by Section 404 of the Clean Water Act

404 wetlands are areas covered by water or that have waterlogged soils for long periods during the growing season. Plants growing in wetlands are capable of living in soils lacking oxygen for at least part of the growing season. 404 wetlands include, but are not limited to, bottomlands, forests, swamps, pocosins, pine savannahs, bogs, marshes, wet meadows, and coastal wetlands.

Map 6 provides the approximate location of pocosin, bottomland hardwood/swamp forest, and coastal wetlands located within the county's planning jurisdiction. Note: Map 8 on page 50 depicts significant natural heritage areas.

MAP 6 - WETLANDS

Table 24 indicates the types of wetlands located in Camden County, the number of acres in each type of wetland, and the percentage of each type.

Table 24
Camden County
Wetlands

Wetland Name	Acreage	Percentage
Bottomland Hardwood	2,293	1.52%
Cleared Bottomland Hardwood	16	0.01%
Cleared Hardwood Flat	640	0.43%
Cleared Headwater Swamp	25	0.02%
Cleared Pine Flat	54	0.04%
Cleared Swamp Forest	3	0.00%
Cutover Bottomland Hardwood	72	0.05%
Cutover Hardwood Flat	1,087	0.72%
Cutover Headwater Swamp	259	0.17%
Cutover Pine Flat	405	0.27%
Cutover Swamp Forest	1	0.00%
Drained Bottomland Hardwood	370	0.25%
Drained Freshwater Marsh	6	0.00%
Drained Hardwood Flat	3,283	2.18%
Drained Headwater Swamp	458	0.30%
Drained Pine Flat	1,874	1.24%
Drained Swamp Forest	17,061	11.33%
Estuarine Shrub/Scrub	92	0.06%
Freshwater Marsh	39	0.03%
Hardwood Flat	6,843	4.55%
Headwater Swamp	927	0.62%
Human Impacted	95	0.06%
Managed Pineland	8,603	5.71%
Pine Flat	7,542	5.01%
Pocosin	375	0.25%
Salt/Brackish Marsh	1,674	1.11%
Swamp Forest	37,109	24.65%
Total Wetlands Acres	91,206	
Total Acres in Camden County	150,557	
Total % of Wetlands	60.58%	

Source: Holland Consulting Planners, Inc., (April, 2003); National Wetlands Inventory.

Section 404 of the Clean Water Act requires that anyone interested in depositing dredged or fill material into "waters of the United States" including wetlands, must apply for and receive a permit for such activities. The Wilmington office of the US Army Corps of Engineers has regulatory authority in Camden County's planning jurisdiction. While there may be scattered wetland areas (non-coastal wetlands) located within Camden County, the specific locations of wetland areas must be determined through on-site analysis. It should be noted that in some Areas of Environmental Concern, both the US Army Corps of Engineers and the regulatory requirements of the Coastal Area Management Act may have overlapping jurisdiction. Simultaneous to the preparation of this plan, amendments to the federal definition of wetlands were being considered which could reduce the areas afforded protection under the wetlands legislation.

The North Carolina Wetlands Restoration Program (NCWRP) was established in 1996 to restore wetlands, streams, and streamside (riparian) areas. The NCWRP accepts payments to the DENR Trust Fund according to a fee schedule. The payments are used for wetland mitigation activities. The table below depicts mitigation activities in the entire Pasquotank River Basin since 1995. Please note that Camden County is not located in all of the subbasins. The county is located in a portion of subbasin 03-01-50 and 03-01-54.

Table 25
Permitted Wetland Mitigation Activities (in Acres) by Subbasin and Year

Subbasin Number	1995	1996	1997	1998	1999	2000	Total
03-01-50	0.50	0	20.60	0	0	0	21.10
03-01-54	74.74	0	0.20	0	0	0	74.94
Total Acreage	75.24	0	20.80	0	0	0	96.04

Source: NC Division of Water Quality.

vi. Slopes in Excess of 12%

There are no slopes in excess of 12% located within Camden County.

vii. Excessive Erosion Areas

Excessive erosion of shoreline areas has not been a problem within Camden County's planning jurisdiction.

viii. Natural Resource Fragile Areas

Natural resource fragile areas are generally recognized to be of educational, scientific, or cultural value because of the natural features of the particular site. Features in these areas serve to distinguish them from the vast majority of the landscape. These areas include complex natural areas, areas that sustain remnant species, pocosins, wooded swamps, prime wildlife habitats, or registered natural landmarks.

The North Carolina Natural Heritage Program of the Division of Parks and Recreation works to identify and facilitate protection of the most ecologically significant natural areas remaining in the state. Natural areas may be identified because they provide important habitat for rare species or because they contain outstanding examples of the rich natural diversity of this state.

The Great Dismal Swamp National Wildlife Refuge and the Great Dismal Swamp Natural Area are located in Camden County. These areas, as well as other portions of the county are home to a variety of endangered, threatened, or rare plant and animal species. Maps 7 and 8 depict other Protected Lands and Natural Heritage Areas in Camden County. Tables 26 and 27 outline acreage associated with Protected Lands and Natural Heritage Areas. Among the state and federal organizations reporting the status of plants and animals within the county are the North Carolina Natural Heritage Program and the United States Department of the Interior. These agencies rank species by the severity of the threat to their continued existence. The most severely threatened species are labeled endangered. The next lower level species are labeled threatened, followed by species of special concern and significantly rare.

Table 26
Camden County
Protected Lands Acreages

Area Name	Acreage	Percentage
Great Dismal Swamp National Wildlife	104,172	67.2%
WRC North River Gameland	3,238	2.2%
Harrison Tract	3,516	2.3%
Parks Dismal Swamp Natural Area	14,349	9.5%
Total Acres of Protected Land	125,275	
Total Acres in Camden County	150,557	
Total % of Protected Land	81.2%	

Source: NC Department of Environmental and Natural Resources.

MAP 7 - PROTECTED LANDS

MAP 8 - NATURAL HERITAGE AREAS

Table 27
Camden County
Natural Heritage Areas

Site Name	Acres	Percentage
Broad Creek Marshes	2,632	1.75%
Dismal Swamp State Natural Area	14,327	9.52%
Great Dismal Swamp National Wildlife Refuge	9,017	5.99%
Hunting Creek Pocosin and Marsh	2,019	1.34%
Indiantown Creek/North River Cypress Forest	1	0.00%
North River/Crooked Creek Wetlands	2,944	1.96%
North River/Great Creek Marshes and Swamp	503	0.33%
Shipyard Landing Natural Area	1,611	1.07%
The Green Sea	6,355	4.22%
Whitehall Shores Hardwood Forest	170	0.11%
Total Natural Heritage Acres in Camden County	39,579	
Total Acres in Camden County	150,557	
% of Natural Heritage	26.29%	

Source: NC Department of Environmental & Natural Resources.

There are two animal species that are listed as endangered and two animal species listed as threatened in Camden County. The Red Cockaded Woodpecker (Picoides borealis) and the Shortnose Sturgeon (Acipenser brevirostrum) are listed as endangered. The Bald Eagle (Haliaeetus leucocephalus) and the American Alligator (Alligator mississippiensis) are listed as threatened. In addition, the state lists the Timber Rattlesnake (Crotalus horridus) as special concern. The only plant species that is listed as endangered by the state is the Virginia Least Trillium (Trillium pusillum var virginianum). The federal status is federal species of concern. The state lists the Carolina Grasswort (Lilaeopsis carolinensis) as threatened. Species that are endangered, threatened, or of a special concern are protected by federal and/or state law.

There are several species which are listed as being significantly rare. The label means that they are at risk and an effort should be made to monitor their population or to seek their classification as a protected species. The significantly rare plant and animal species in Camden County are the Black-Throated Green Warbler-Coastal Plain population (Dendroica viren waynei), Hessells Hairstreak (Callophrys hesseli), Northern Oak Hairstreak (Fixsenia favonius ontario), Twig Rush (Cladium mariscoides), Beaked Spikerush (Eleocharis rostellata), and Winged Seedbox (Ludwigia alata).

The complex natural area in Camden County also includes areas that sustain remnant species, pocosins, wooded swamps, and wildlife habitats. The Great Dismal Swamp National Wildlife Refuge could also fit in these overlapping categories.

There are no registered natural landmarks or unique geologic formations in Camden County.

h. Areas of Resource Potential

i. Regionally Significant Public Parks

The Great Dismal Swamp National Wildlife Refuge is located in northeastern North Carolina and southeastern Virginia. The refuge consists of over 109,000 acres of forested wetlands. Drummond Lake, a 3,100-acre natural lake, is located in the center of the swamp. At one time the swamp was a very successful commercial logging area. Logging continued in the area until the mid-1970s when the wildlife refuge was established. The swamp is home to many rare plant and animal species. There are a variety of activities that visitors may participate in while at the Great Dismal Swamp. Those activities include hiking, biking, photography, fishing, boating and wildlife observation. Also of interest is the Great Dismal Swamp Canal. The canal is listed on the National Register of Historic Places and has been designated as a National Civil Engineering Landmark.

ii. Marinas and Mooring Fields

Marinas are defined as any publicly- or privately-owned dock, basin, or wet boat storage facility constructed to accommodate more than ten boats and providing any of the following services: permanent or transient docking spaces, dry storage, fueling facilities, haulout facilities, and repair service. Excluded from this definition are boat ramp facilities allowing access only, temporary docking and none of the preceding services.

Camden County allows the construction of marinas and any associated drystack storage facilities that are in compliance with the county zoning ordinance. There are three marinas in Camden County.

A "freestanding mooring" is any means to attach a ship, boat, vessel, floating structure, or other water craft to a stationary underwater device, mooring buoy, buoyed anchor, or piling (as long as the piling is not associated with an existing or proposed pier, dock, or boathouse). When more than one freestanding mooring is used in the same general

vicinity it is commonly referred to as a mooring field. Camden County has not regulated the establishment of mooring fields within its planning jurisdiction and mooring fields have not been a problem. However, the county recognizes that the establishment of mooring fields could lead to the degradation of water quality.

iii. Floating Homes

A floating home or structure is any structure, not a boat, supported by means of flotation, designed to be used without a permanent foundation, which is used or intended for human habitation or commerce. A structure will be considered a floating structure when it is inhabited or used for commercial purposes for more than thirty days in any one location. A boat may be deemed a floating structure when its means of propulsion has been removed or rendered inoperative and it contains at least 200 square feet of living space area.

There are currently no floating homes within Camden County. Camden County does not support the location of floating homes within the county's jurisdiction.

iv. Aquaculture

As defined under N.C. General Statute 106-758, aquaculture is the propagation and rearing of aquatic species in controlled or selected environments, including, but not limited to, ocean ranching. Aquaculture has not been an issue within Camden County's planning jurisdiction. Camden County recognizes that the establishment of aquaculture could have some negative impacts on water quality (see policy P.70).

v. Channel Maintenance and Interstate Waterways

The Intracoastal Waterway runs along Camden County's southeastern boundary. The waterway provides an indispensable route for fishermen, commercial barge traffic, and recreational boat traffic, all instrumental to the county's economic well-being. The waterway is maintained by the US Corps of Engineers. Camden County supports dredging and general maintenance of the Intracoastal Waterway.

Proper maintenance of channels is very important to Camden County because of the substantial economic impact of commercial fisheries. If silt or other deposits fill in the channels, safe and efficient movement of commercial fishing and transport vessels could be impeded.

vi. Marine Resources (Water Quality)

The North Carolina Division of Water Quality assigns water quality classifications to all named waters of the State of North Carolina. The classifications are based upon the existing or contemplated best usage of the various streams and segments of streams within a basin, as determined through studies, evaluations, and comments received at public hearings. The state water classification system is broken down as follows:

Table 28
NC Division of Water Quality Water Body Classifications

PRIMARY FRESHWATER AND SALTWATER CLASSIFICATIONS*	
CLASS	BEST USES
C and SC	Aquatic life propagation/protection and secondary recreation
B and SB	Primary recreation and Class C uses
SA	Waters classified for commercial shellfish harvesting
WS	*Water Supply watershed.* There are five WS classes ranging from WS-I through WS-V. WS classifications are assigned to watersheds based on land use characteristics of the area. Each water supply classification has a set of management strategies to protect the surface water supply. WS-I provides the highest level of protection and WS-IV provides the least protection. A Critical Area (CA) designation is also listed for watershed areas within a half-mile and draining to the water supply intake or reservoir where an intake is located.
SUPPLEMENTAL CLASSIFICATIONS	
CLASS	BEST USES
Sw	*Swamp Waters:* Recognizes waters that will naturally be more acidic (have lower pH values) and have lower levels of dissolved oxygen.
Tr	*Trout Waters*: Provides protection to freshwaters for natural trout propagation and survival of stocked trout.
HQW	*High Quality Waters*: Waters possessing special qualities including excellent water quality, Native or Special Native Trout Waters, Critical habitat areas, or WS-I and WS-II water supplies.
ORW	*Outstanding Resource Waters*: Unique and special surface waters that are unimpacted by pollution and have some outstanding resource values.
NSW	*Nutrient Sensitive Waters*: Areas with water quality problems associated with excessive plant growth resulting from nutrient enrichment.

* Primary classifications beginning with an "S" are assigned to saltwaters.
Source: NC Department of Environment and Natural Resources.

Water classifications vary widely throughout Camden County. Table 29 provides a listing of all water bodies within the county that are classified by the NC Division of Water Quality. Also included are their subbasins and assigned classification. Map 9 identifies the location of these waterbodies. There are currently no HQW or ORW waters within Camden County.

Table 29
Camden County
Alphabetic List of Waterbodies

Name of Stream	Subbasin	Stream Index Number	Class
Albemarle Sound	PAS50	30	SB
Albemarle Sound	PAS54	30	SB
Areneuse Creek	PAS50	30-3-13-(1)	C Sw
Areneuse Creek	PAS50	30-3-13-(2)	SB
Broad Creek	PAS54	30-2-14	SC
Corapeake Ditch	PAS50	30-3-2-1-7-1-1	C
Corapeake Swamp (Jones Millpond)	PAS50	30-3-2-1-1	C Sw
Cow Creek	PAS54	30-1-2-2-5-1-1	C Sw
Great Creek	PAS54	30-2-7	SC
Hunting Creek	PAS54	30-2-10	SC
Indiantown Creek and all interconnecting canals	PAS54	30-2-1	C Sw
Intracoastal Waterway	PAS54	30-2-5-1	SC
Joyce Creek	PAS50	30-3-2-2	C Sw
Little Broad Creek	PAS54	30-2-15	SC
Mill Dam Creek	PAS50	30-3-13-3-(2)	SB
North River	PAS50	30-2	SC
North River	PAS54	30-2	SC
Pasquotank River	PAS50	30-3-(7)	SC
Pasquotank River	PAS50	30-3-(12)	SB
Pasquotank River	PAS50	30-3-(15)	SC
Portohonk Creek and connecting canals	PAS50	30-3-14	C Sw
Raymond Creek	PAS50	30-3-17	C Sw
Raymond Creek	PAS54	30-3-17	C Sw
Run Swamp Canal and all interconnecting canals	PAS54	30-2-1-1	C Sw
Sawyers Creek	PAS50	30-3-6	C Sw

Source: NC Division of Water Quality.

MAP 9 - LOCATION OF WATERBODIES

All of Camden County is located within the Pasquotank River Basin. The county is located within two subbasins, 03-01-50 and 03-01-54. The boundaries of these subbasins are included on all county-wide maps within this plan. The county occupies 6.7% of the Pasquotank River Basin's total area.

vii. Primary Nursery Areas and Submerged Aquatic Vegetation

The Albemarle Sound, Pasquotank River (Raymond Creek, Portohonk Creek, Areneuse Creek, Joyce Creek, Sawyers Creek, etc.) and North River (Wading Gut Creek, Broad Creek, Hunting Creek, Back Landing Creek, Public Creek, Great Creek, Indiantown Creek, etc.) are extremely important to fisheries production and support significant commercial and recreational fisheries. The above listed areas are documented spawning and nursery areas for blueback herring and alewife. These areas also function as nursery areas for spot, croaker, weakfish, flounder, striped bass, white perch, yellow perch, blue crabs and other commercially and recreationally important species (refer to Map 9).

Broad Creek was designated as an Inland Primary Nursery Area by the North Carolina Wildlife Resources Commission in 1990. This designation was based on established criteria and sampling conducted by DMF.

The North Carolina Marine Fisheries Commission (MFC) has adopted definitions in rule for anadromous spawning and nursery areas. Anadromous fish spawning areas are those areas where evidence of spawning of anadromous fish has been documented by direct observation of spawning, capture of running ripe females, or capture of eggs or early larvae [NCAC 15A 3I.0101 (20) (C)]. Anadromous fish nursery areas are those areas in the riverine and estuarine systems utilized by post-larval and later juvenile anadromous fish [NCAC 15A 3I.0101 (20) (D)].

Submerged aquatic vegetation (SAV) is found in waters that border Camden County. SAVs are an important habitat utilized by finfish and invertebrates. Beds of SAV are one of the critical habitat types defined by MFC [NCAC 15A 3I.0101 (20) (A)].

Wetlands are of great importance to fisheries production serving as sources of biological productivity, directly and indirectly, nursery areas and reducing sedimentation/turbidity to improve water quality.

2. Environmental Composite Map

The environmental composite map (Map 10) is a requirement under the new CAMA Land Use Planning guidelines. This map is intended to work in conjunction with the Land Suitability Maps discussed earlier in this plan and should be utilized for future land use map impact analysis (see Future Land Use Map, page 187). The Environmental Composite Map breaks down land masses within the county into three different categories based on natural features and environmental conditions. The categories utilized are as follows:

Class I – Land that contains only minimal hazards and limitations that can be addressed by commonly accepted land planning and development practices. Class I land will generally support the more intensive types of land uses and development.

Class II – Land that has hazards and limitations for development that can be addressed by restrictions on land uses, special site planning, or the provision of public services, such as water and sewer. Land in this class will generally support only the less intensive uses, such as low density residential, without significant investment in services.

Class III – Land that has serious hazards and limitations. Land in this class will generally support very low intensity uses, such as conservation and open space.

The Environmental Composite Model was prepared in a similar fashion to the Land Suitability Maps. An overlay analysis was performed, breaking the county into **one acre cells** utilizing only map layers determined to be environmental factors. The layers used, and their assigned classes, are outlined in Table 30.

MAP 10 - ENVIRONMENTAL COMPOSITE MAP

Table 30
Camden County
Environmental Composite Map Layers

Layer		Class I	Class II	Class III
Coastal Wetlands				✓
Exceptional or Substantial Non-Coastal Wetlands				✓
Beneficial Non-Coastal Wetlands			✓	
Estuarine Waters				✓
Soils with Slight or Moderate Septic Limitations		✓		
Soils with Severe Septic Limitations				✓
Flood Zones			✓	
Storm Surge Areas			✓	
HQW/ORW Watersheds			✓	
Water Supply Watersheds			✓	
Significant Natural Heritage Areas			✓	
Protected Lands				✓

For a given cell, the computed value of the cell will be determined by the highest class theme that contains the cell. For example, if a cell is in a coastal wetland (Class III) and in a storm surge area (Class II) and intersects a soil with a slight or moderate septic limitation (Class I), the cell value will be Class III. In other words, if a cell does not meet the criteria for Class III, but qualifies as Class II, it has Class II for a value. If a cell does not qualify for either Class III or Class II, then it is Class I by default. This order enables the modeler to leave out themes that are not associated with Classes II or III to simplify the model (yielding the same results).

The resulting Environmental Composite Map is similar to the Land Suitability Maps in that Class III areas are consistent with the Least Suitable category and the Class I areas are related to the Most Suitable areas. The primary difference is the absence of infrastructure in the Environmental Composite Map that heightens the emphasis on environmental sensitivity and relative land conservation value. The Future Land Use Map reflects the Class I, II, and III criteria.

Table 31 provides a summary of the land use acreages by class for the county as a whole as well as by subbasin.

Table 31
Camden County and Subbasins
Land Use Acreage by Class

	Subbasin 03-01-50	Subbasin 03-01-54	Camden County
Class I	6,966	0	6,966
Class II	44,000	13,946	57,946
Class III	60,914	24,731	85,665
TOTAL	111,880	38,677	150,557

Source: Holland Consulting Planners, Inc.

3. Environmental Conditions (Water Quality, Natural Hazards, and Natural Resources)

The Pasquotank River Basinwide Water Quality Plan was approved and endorsed by the North Carolina Environmental Management Commission in July, 2002, and will be used as a guide by the NC Division of Water Quality. The following are the goals of DWQ's basinwide program:

- Identify water quality problems and restore full use to impaired waters;
- Identify and protect high value resource waters;
- Protect unimpaired waters while allowing for reasonable economic growth;
- Develop appropriate management strategies to protect and restore water quality;
- Assure equitable distribution of waste assimilative capacity for dischargers; and
- Improve public awareness and involvement in the management of the state's surface waters.

As existing and future land use is considered in Camden County, these goals should be kept in mind.

Within the Pasquotank River Basin, Camden County is located primarily in subbasin 03-01-50 on the west and partially in subbasin 03-01-54 to the east. The Pasquotank River Basin boundaries and subbasin boundaries are shown on Map 11. It should be noted that currently there are no outstanding resource waters or high quality waters located in Camden County.

The following provides a summary of existing conditions in both subbasins and the DWQ recommendations from the 2002 Basinwide Plan:

a. Subbasin 03-01-50

This subbasin consists of the Pasquotank River and its tributaries in Camden, Pasquotank, and Gates counties. The headwaters of the Pasquotank River include freshwater in the Great Dismal Swamp. Southward, a significant portion of the waters in this subbasin is brackish estuarine, including Albemarle Sound and the Pasquotank River below Elizabeth City.

This subbasin includes the Great Dismal Swamp Wildlife Refuge and portions of the Great Marsh. In addition, the subbasin has Significant Natural Heritage Areas near the mouth of the Pasquotank River.

Table 32
Subbasin 03-01-50 Description

Land and Water	
Total area:	454 mi^2
Land area:	390 mi^2
Water area:	64 mi^2
Population Statistics	
1990 Est. pop.:	31,369 people
Pop. density:	80 persons/mi^2
Land Cover	
Forest/Wetland:	46%
Surface Water:	18%
Urban:	<1%
Cultivated Crop:	34%
Pasture/Managed Herbaceous:	1%

There are seven permitted dischargers in the subbasin. The Elizabeth City WWTP is the only major discharge, which discharges into the Pasquotank River. Also, there are 15 general permits. Two facilities, the Elizabeth City Wastewater Treatment Plant and the US Coast Guard, are required under permit to perform whole effluent toxicity testing in the subbasin. The Elizabeth City WWTP experienced problems during 1997, and the causes of their toxicity testing failures are not clear. Since September 1997, the facility has not failed a test. There is one individual storm water permit issued in the subbasin for Universal Forest Products Eastern Division, Inc.

MAP 11 - MAP OF PASQUOTANK RIVER BASIN

2002 Recommendations: DWQ recommends that Elizabeth City decide whether they wish to use the Pasquotank River as a raw water supply source. If Elizabeth City decides not to use the Pasquotank River as a raw drinking water supply source, then the river could be reclassified for non-water supply use. In order for DWQ to consider the reclassification, a request for the reclassification must be submitted to DWQ. If this change were made, the water quality controls in this area would be less stringent, resulting in a more favorable situation for overall development. As of April 2002, DWQ has not received any requests from Elizabeth City. Until then, Elizabeth City, Pasquotank County, and Camden County are required to implement water supply watershed protection ordinances that meet or exceed the state's rules. The 2002 Basinwide Plan indicates that the Division of Water Quality's Regional Office has identified numerous algal blooms near the canals of Areneuse Creek. The contributing sources include increased land development. The Division of Water Quality will continue to monitor the creek and evaluate the potential impacts of these blooms.

b. Subbasin 03-01-54

This subbasin consists of Currituck Sound and the North River and its tributaries in Currituck and Camden counties.

DWQ did not conduct benthic macroinvertebrate, fish community, fish tissue or ambient sampling in this subbasin. Therefore, there is currently little information on water quality status in subbasin 03-01-54. DWQ relies on information from the Division of Environmental Health, local water treatment plant operators, and county health departments for this subbasin.

This subbasin contains multiple public lands and Significant Natural Heritage Areas including several National Wildlife Refuges, the Currituck Banks National Estuarine Research Reserve, Northwest River Marsh Game Land, North River Game Land, and portions of the Great Marsh.

Table 33
Subbasin 03-01-54 Description

Land and Water	
Total area:	503 mi^2
Land area:	304 mi^2
Water area:	199 mi^2
Population Statistics	
1990 Est. pop.:	14,653 people
Pop. density:	48 persons/mi^2
Land Cover	
Forest/Wetland:	39%
Surface Water:	39%
Urban:	<1%
Cultivated Crop:	20%
Pasture/Managed Herbaceous:	<1%

A portion of this subbasin is located on the Outer Banks, an area of high growth potential. Growth management within the next five years will be imperative in order to maintain good water quality in the subbasin.

There are two permitted NPDES dischargers in the subbasin: Currituck County Water Treatment Plant and Corolla North Utilities. Both facilities hold minor permits. No facilities are required under permit to perform whole effluent toxicity testing in the subbasin. There are no NPDES individual storm water permits issued in the subbasin; however, there are 11 general storm water permits issued.

2002 Recommendations: DWQ will continue to monitor the frequency and duration of algal blooms in Currituck Sound. Where necessary, DWQ will use the assistance of the other scientific staff such as Rapid Response Teams to assist in determining the cause of the algal blooms. Upon notification of an algal bloom in the vicinity, DWQ will continue to immediately provide the information to the public.

DWQ should collaborate with the National Oceanic and Atomospheric Administration's Submerged Aquatic Vegetation Research efforts to monitor the status of the submerged aquatic vegetation in the area. Where feasible, DWQ should allocate funding and technical assistance toward the initiative.

DWQ will continue to provide information to the US Army Corps in their efforts to undertake a Scoping Study of Currituck Sound. Pending budget flexibility, DWQ will allocate funding towards future collaboration efforts with the US Army Corps.

c. Registered Animal Operations/Population Densities within Pasquotank River Basin

Table 34 provides a summary of registered animal operations for subbasins 03-01-50 and 03-01-54.

Table 34
Camden County
Registered Animal Operations

	Cattle			Poultry			Swine		
Subbasin	No. of Facilities	No. of Animals	Total Steady State Live Weight*	No. of Facilities	No. of Animals	Total Steady State Live Weight*	No. of Facilities	No. of Animals	Total Steady State Live Weight*
03-01-50	0	0	0	0	0	0	4	5,455	634,940
03-01-54	0	0	0	0	0	0	3	23,978	3,463,611
Totals	0	0	0	0	0	0	7	29,433	4,098,551

*Steady State Live Weight (SSLW) is the result, in pounds, after a conversion factor has been applied to the number (head count) of swine, cattle, or poultry on a farm. The conversion factors, which come from the Natural Resource Conservation Service (NRCS) guidelines, vary depending on the type of animals on the farm and the type of operation (for example, there are five types of hog farms). Since the amount of waste produced varies by the size of the animal, SSLW is the best way to compare the sizes of the farms.
Source: Pasquotank Basinwide Water Quality Management Plan.

Table 35 provides population densities for the Pasquotank River Basin. In using these data, it should be noted that some of the population figures are estimates because the census block group boundaries do not generally coincide with subbasin boundaries. The census data are collected within boundaries such as counties and municipalities. By contrast, the subbasin lines are drawn along natural drainage divides separating watersheds. Therefore, where a census block group straddles a subbasin line, an estimate is made on the percentage of the population that is located in the subbasin. This is done by simply determining the percentage of the census block group area located in the subbasin and then taking that same percentage of the total census block group population and assigning it the subbasin. Use of this method necessitates assuming that population density is evenly distributed throughout the census block group, which is not always the case. However, the level of error associated with this method is not expected to be significant for the purposes of this document. It is also important to note that the census block groups change every ten years, so comparisons between years must be considered approximate.

Table 35
Pasquotank River Basin
Population, Densities, and Land Area Summaries for Camden County Subbasins

SUBBASIN	POPULATION[1] (Number of Persons)			POPULATION DENSITY[2] (Persons/Square Mile)			LAND AND WATER AREAS[3]			
							Total Land and Water Area		Water Area	Land Area
	1970	1980	1990	1970	1980	1990	(Acres)	(Sq. Mi.)	(Sq. Mi.)	(Sq. Mi.)
03-01-50	28,271	29,867	31,369	72	77	80	291,066	455	64	390
03-01-54	8,320	12,525	14,653	27	41	48	322,062	503	199	304
TOTALS	**36,591**	**42,392**	**46,022**	**99**	**118**	**128**	**613,128**	**958**	**263**	**694**

[1] Population estimated based on US Census data and percentage of census block that falls within the subbasin.
[2] Population density based on land area only. Large wetlands (swamps) not included in area used to calculate density.
[3] Information generated by the NC Center for Geographic Information Analysis.
Source: Pasquotank Water Quality Management Plan.

d. Growth Trends

Basinwide, the percentage increase in population from 1980 to 1990 was 16.4 percent, exceeding the statewide increase of 12.7 percent over the same ten-year period. The projected population figures indicate that the majority of the basin is expected to continue to grow at significant rates. The highest levels of growth are expected on the Outer Banks.

C. ANALYSIS OF LAND USE AND DEVELOPMENT

1. Introduction

The Division of Coastal Management Land Use Plan Guidelines (15A NCAC 7B.0207) require that existing land uses and water uses be mapped. The land and water use maps in conjunction with the existing land suitability map, page 105 and the future land suitability map, page 124 should be utilized as working documents and serve as a basis for the development of the future land use map(s). Specifically, this plan should address the following:

- Significant land use compatibility problems;
- Significant water use compatibility problems including those identified in any water supply plan appendix and those identified in the applicable Division of Environmental Management basinwide plan;
- Significant problems that have resulted from unplanned development and that have implications for future land use, waster use, or water quality;
- An identification of areas experiencing or likely to experience changes in predominant land uses, including agricultural and forestry land being converted to other uses and previously undeveloped shoreline areas where development is now occurring;
- Significant water quality conditions and the connection between land use and water quality.

This is an advanced core plan and specific existing land use discussions are included for the village areas and highway corridor study areas. These discussions are included on pages 77 to 84.

2. Land Use in Relation to Water Quality

This section will serve to take a closer look at how land use in Camden County relates to water quality. This section has been compiled with information provided by the North Carolina Division of Water Quality (DWQ). Under the Basinwide Management Program, the DWQ completes Basinwide Water Quality Plans.

Basinwide water quality planning is a non-regulatory, watershed-based approach to restoring and protecting the quality of North Carolina's surface waters. Preparation of a basinwide water quality plan is a five-year process, which is broken down into three phases. While these plans are prepared by the DWQ, their implementation and the protection of water quality entails the coordinated efforts of many agencies, local governments, and stakeholder groups in the state. The first cycle of plans was completed in 1998, but each plan is updated at five-year intervals.

It should be noted that the results of the monitoring efforts are not intended to provide precise conclusions about pollutant budgets for specific watersheds. Since the assessment methodology is geared toward general conclusions, it is important not to manipulate the data to support policy decisions beyond the accuracy of the data.

Two primary methods of water quality testing were performed in Camden County. The details of this methodology are described below so that the information on the results of this testing can be better understood. The methods utilized were Benthic Macroinvertebrate Monitoring and the Ambient Monitoring System. DWQ also observes water bodies for the existence of algal blooms, which are an indication of poor water quality.

Benthic macroinvertebrates are organisms, primarily aquatic insect larvae, which live in and on the bottoms of rivers and streams. The use of macroinvertebrate data has proven to be a reliable water quality monitoring tool because most macroinvertebrates are immobile and sensitive to subtle changes in water quality. Benthic communities also respond to, and show the effects of, a wide array of potential pollutant mixtures.

The Ambient Monitoring System (AMS) is a network of stream, lake, and estuarine (saltwater) water quality monitoring stations (about 420 statewide) strategically located for the collection of physical and chemical water quality data (or parameters). Water quality parameters are arranged by freshwater or saltwater water body classification and corresponding water quality standards. Under this arrangement, Class C waters (refer to page 54 for a description of water quality classifications) are assigned minimum monthly parameters with additional parameters assigned to waters with classifications such as trout waters and water supplies.

Prolific growths of phytoplankton, often due to high concentrations of nutrients, sometimes result in “blooms” in which one or more species of alga may discolor the water or form visible mats on the water's surface. Blooms may be unsightly and deleterious to water quality causing fish kills, anoxia, and taste and odor problems.

a. Subbasin 03-01-50

This subbasin consists primarily of the Pasquotank River Basin and its tributaries in Camden, Pasquotank, and Gates counties. Land use is mostly cropland or forest, with the greatest amount of agricultural land use in the southern portion of the subbasin. This land is utilized for row crops, such as cabbage, corn, and soybeans. Most of the development is in the Elizabeth City area; other small urban areas include the villages of Camden and South Mills.

Many tributaries have little or no flow in the summer months, and there are few wadeable streams. As noted earlier in this plan, the Elizabeth City Waste Water Treatment Plant is the only major permitted discharger in the subbasin. Streams in this subbasin run through a highly agricultural landscape, but they include both channelized streams and streams with a more natural channel. DWQ has conducted ambient and benthic macroinvertebrate sampling in this subbasin.

Benthic macroinvertebrate data have been collected from five sites in this subbasin since 1995. Two of these sites, Areneuse Creek and Sawyers Creek, are located within Camden County, and this data was collected in February of 2000 (the location of these sites can be found on Map 12). The benthic macroinvertebrate monitoring sites in this subbasin are currently not rated because criteria for assigning bioclassifications to swamp streams are still in draft form.

Mild shifts toward negative water quality were observed at these sites, which are associated to either agricultural or urban land use. In addition to the indicators present at the monitoring sites, numerous algal blooms have been identified near the canal of Areneuse Creek. These may also be attributed to increased urban development or non-point source runoff from agricultural activity.

Map 12 provides a view of the locations of the two benthic macroinvertebrate monitoring sites in the county, and how these sites relate to surrounding land use. Based on the map, it appears the adverse affect on water quality is associated with both increased development and agricultural activity. There has been a significant increase in residential development near Areneuse Creek along South Mills Dam Road. This increase in urban storm water runoff is most likely responsible for the existence of algal blooms in the area. The monitoring station on Sawyers Creek is located upstream from the development taking place within the Village of Camden, and therefore the minor shift in water quality along this stretch may be attributed to agricultural non-point source pollution.

MAP 12 - LAND USE IN RELATION TO WATER QUALITY

In order to address this problem and alleviate any further degradation of the water quality within the county, several steps may be taken. The county should continue to enforce agricultural Best Management Practices (BMPs). Refer to Appendix III and IV. It may be useful to disseminate information on BMPs, or to hold public meetings to discuss how poor management of these practices may affect the long term quality of surface water within the county. Additionally, as development pressure increases within the county, close attention should be paid to storm water control issues. The county should begin working towards developing a successful Storm water Management Program. Under Phase III of the US Environmental Protection Agency's Storm water Control Regulations, the county will be required to establish this program. The county should be pro-active in working towards establishing this program, to ensure protection of surface water quality during the planning period.

There is only one ambient monitoring station located in the county's jurisdiction, and it is located in this subbasin. The largest impact on this body of water is the urban storm water runoff and WWTP discharge from Elizabeth City (the location of these facilities and the monitoring station can be found on Map 12). There are indications that urban storm water runoff may be adversely affecting water quality in the Pasquotank River. This problem will be addressed in the context of the Elizabeth City storm water control program which is required under Phase II of the EPA's Storm water Control Program. Permits are required to be in place under Phase II by May of 2004. Recent testing has indicated that the WWTP in Elizabeth City is not currently having an adverse impact on the water quality in the Pasquotank River.

b. Subbasin 03-01-54

This subbasin consists of Currituck Sound, plus the North River and its tributaries in Currituck and Camden counties. Land use in this subbasin is primarily cropland and forest. However, development is increasing rapidly along US 158 and throughout the Outer Banks. There has been no recent biological monitoring in this subbasin.

The surface waters discussed in this section are fully supporting designated uses or are not rated based on recent DWQ monitoring; however, the data revealed some impacts to water quality. Although no action is required for these streams, voluntary implementation of BMPs is encouraged and continued monitoring is recommended. DWQ will notify local agencies of water quality concerns regarding these waters and work with them to conduct further monitoring and to locate sources of water quality protection funding.

This subbasin has the potential to undergo a great population increase due to its proximity to Virginia and growing municipalities in the North Carolina portion of the basin. Growth management within the next five years will be imperative in order to maintain good water

quality in this subbasin. Growth management can be defined as the application of strategies and practices that help achieve sustainable development in harmony with the conservation of environmental qualities and features of an area. On a local level, growth management often involves planning and development review requirements that are designed to maintain or improve water quality.

3. Land Use

The existing land use in Camden County was mapped by a windshield survey conducted by Holland Consulting Planners, Inc., and Hobbs, Upchurch and Associates, P.A., on March 11 and 12, 2003. The existing land use is depicted on Map 13 with village areas and highway corridor areas shown on Maps 15 through 18 on pages 80 through 83.

Tables 36, 37, and 38 provide approximate land use acreage summaries for the entire county and individually for subbasins 03-01-50 and 03-01-54. Camden County includes 150,557 acres. The majority of the county is located in subbasin 03-01-50 which includes approximately 74.3% of Camden County. In the entire county and in each subbasin, the majority of the land is utilized as agricultural/open space/low density residential, 79.15%. The second largest land use in Camden County is recreational which in the county as a whole includes 25,472 acres, or 16.92% of the county. However, it should be noted that this includes the Great Dismal Swamp area.

Table 36
Camden County Total Acreage

Land Use	Parcels	Acreage by Land Use	% of Total Acreage
Agricultural/Open Space/Low Density Res*	3,679	119,164	79.15%
Commercial	64	122	0.08%
Multi-family**	2	40	0.03%
Office & Institutional	53	1,029	0.68%
Residential***	2,410	3,349	2.22%
Recreational	11	25,472	16.92%
Industrial	3	1,381	0.92%
Total	6,222	150,557	100.00%

*Low density residential includes areas where residential density is primarily one acre per dwelling unit or greater.
****There is no assumption of density. This category includes parcels where there are more than one dwelling unit per parcel.**
*****Residential includes areas where residential density is primarily less than one acre per dwelling unit.**
Source: Holland Consulting Planners, Inc. (April, 2003).

MAP 13 - EXISTING LAND USE

Table 37
SUBBASIN 03-01-50 ACREAGE (Percentage of county in subbasin -- 74.3%)

Land Use	Parcels	Acreage by Land Use	% of Total Acreage
Agricultural/Open Space/Low Density Res*	2,962	84,759	75.76%
Commercial	61	97	0.09%
Multi-family**	2	40	0.03%
Office & Institutional	52	906	0.81%
Residential***	2,091	2,812	2.51%
Recreational	8	23,266	20.80%
Industrial	0	0	0.00%
Total	5,176	111,880	100.00%

*Low density residential includes areas where residential density is primarily one acre per dwelling unit or greater.
****There is no assumption of density. This category includes parcels where there are more than one dwelling unit per parcel.**
*****Residential includes areas where residential density is primarily less than one acre per dwelling unit.**
Source: Holland Consulting Planners, Inc. (April, 2003).

Table 38
SUBBASIN 03-01-54 ACREAGE (Percentage of county in subbasin -- 25.7%)

Land Use	Parcels	Acreage by Land Use	% of Total Acreage
Agricultural/Open Space/Low Density Res*	700	34,405	88.95%
Commercial	3	25	0.07%
Multi-family**	0	0	0.00%
Office & Institutional	6	123	0.32%
Residential***	331	537	1.39%
Recreational	3	2,206	5.70%
Industrial	3	1,381	3.57%
Total	1,046	38,677	100.00%

*Low density residential includes areas where residential density is primarily one acre per dwelling unit or greater.
****There is no assumption of density. This category includes parcels where there are more than one dwelling unit per parcel.**
*****Residential includes areas where residential density is primarily less than one acre per dwelling unit.**
Source: Holland Consulting Planners, Inc. (April, 2003).

Clearly the majority of Camden County is agricultural/open space/low density residential. Most development within the county has been concentrated in or near the communities of South Mills, Shiloh, Old Trap, Camden and along US 158 from the City of Elizabeth City to the Camden Community. There are no incorporated communities within Camden County.

Since the preparation of the 1993 Camden County Land Use Plan, the extension of water and sewer services by Elizabeth City across the Pasquotank River to serve properties along US 158 has accelerated growth. This area has been the most rapidly developing primarily non-residential area within the county. However, there has also been significant condominium development since 1993. In residential development, both the Camden and South Mills townships are experiencing significant growth. It should be noted that waterfront development is rapidly increasing, especially in the Camden Township. However, very little development activity is occurring in the Shiloh Township. Table 39 provides a summary of the Camden County building permits issued from January 1999, through May 2004.

Table 39
Camden County
Building Permits – January, 1999 to May 31, 2004

BUILDING PERMITS	1999	2000	2001	2002	2003	2004
New Single-Family Development	78	64	95	157	186	75
Mobile Homes						
Class A	25	28	27	24	9	9
Class B	8	13	9	10	11	5
Modular	1	1	5	6	5	8
Others	69	69	90	64	11	0
TOTALS	181	175	226	261	222	97

Source: Camden County Building Inspector's Office.

It should be noted that there are currently no major subdivisions that have received final plat approval but not developed.

There are limited land use compatibility problems within Camden County. This is primarily because of the low density of development. However, the following provides a summary of the problems that exist:

- There has been some platting and development of subdivisions on unsuitable soils and construction in floodplain areas, including primarily undeveloped subdivisions in the Camden Point area.

- Strip commercialization/development is occurring between Camden and the Pasquotank River along US 158.

- Increasing residential development, especially in the South Mills Township, is infringing on agricultural production.

- The density of development along NC 343 from Camden to Shiloh is rapidly increasing.

- Much future development in Camden County will infringe upon or impact wetland areas.

Because of the historically slow rate of growth, there have been no significant problems from unplanned development that have significant implications for future land use, water use, or water quality. If any, the major development area is the causeway between the Pasquotank River and Camden. As development continues, the impervious surface areas increase, and therefore, stormwater runoff into the adjacent water bodies increases. The subdivided land in the Camden Point area could be a water quality problem. However, this is unlikely because most of the subdivided areas cannot be developed because of wetlands. In the future, waterfront development should be monitored to control any adverse impacts on water quality.

There are two areas of Camden County that are expected to experience changes in predominant land uses. The South Mills Township is experiencing the initial stages of development pressure from the southward growth of the Chesapeake, Virginia area. The four-laning of US 17 north of the North Carolina state line will accelerate this development. The South Mills Township will first become a "bedroom" community for Chesapeake. Then the demand for local services will bring commercial development. It is clear that land use in the South Mills Township will significantly change in the next five to ten years.

Secondly, residential development is rapidly increasing in the Courthouse Township south of Camden. This is especially true along the Pasquotank River shoreline. This trend is expected to continue.

4. Historic and Archeological Sites

The North Carolina Department of Cultural Resources, Division of Archives and History, has indicated that there are 69 known archaeological sites located within Camden County. Information on all archaeological locations is restricted and may not be included in any public document or made available to any individual without the permission of the state archaeologist. Any development projects should be implemented under appropriate historic preservation legislation and in coordination with the Division of Archives and History to avoid damage to valuable archaeological resources.

Based on the Division of Archives and History files, there are seven structures located in Camden County which are listed in the National Register of Historic Places, three on a study list, and two sites of local significance. Below is a list of those structures and their general location:

(1) William Riley Abbott House (South Mills vicinity) - National Register
(2) Camden County Courthouse (Camden) - National Register
(3) (Former) Camden County Jail (Camden) - National Register
(4) Dismal Swamp Canal (Federal Nomination) (South Mills vicinity) - National Register
(5) Caleb Grandy House (Belcross) - National Register
(6) Lamb-Ferebee House (Camden vicinity) - National Register
(7) Milford (Relfe-Grice-Sawyer House) (Camden vicinity) - National Register
(8) Burnham House (South Mills Vicinity) - Study List
(9) Creekmore Store (Belcross) - Study List
(10) Widow's Son Masonic Lodge #75 (Camden) - Study List
(11) Ebenezer Baptist Church, 1850 (South Mills) - Local Significance
(12) Marion Anderson High School (former Black High School, currently Camden Middle School) (Camden vicinity) - Local Significance

Map 14 depicts the locations of the historic sites.

5. Community/Highway Corridor Areas

a. Introduction

The anticipated development in Camden County in the next five to ten years is expected to occur in the following seven areas:

- Camden Community
- Shiloh Community
- South Mills Community
- Highway 343 Corridor South
- Highway 343 Corridor North
- Highway 17 Corridor
- Highway 158 Corridor

MAP 14 - HISTORIC SITES

Because of this anticipated development, Camden County is focusing on the future growth of these areas. The areas are depicted on Map 15.

The community/highway corridor plan areas have been delineated based upon the following:

- Physical features including the Land Suitability Analysis Map (Map 23).
- Comment from the CAMA Land Use Plan Update Committee.
- Consideration of existing and anticipated land use conditions.
- Coordination with proposed water and sewer improvements.
- Comments received at the public input/information meetings conducted during the development of the plan.

b. Existing Land Use Community/Highway Corridor Areas

There are seven community/highway corridor study areas. These include: Camden, Shiloh, South Mills, Highway 343 Corridor South, Highway 343 Corridor North, Highway 17 Corridor, and Highway 158 Corridor. The Highway 343 Corridor North is divided into two areas, one north of Camden and the second south of South Mills.

The existing land use acreage for all seven areas is summarized in Table 40. In all seven areas, the predominate land use is agricultural/open space/low-density residential. None of the areas have greater than 1.5% in commercial land use. There is no industrial development located in any of the community/highway corridor areas.

Maps 16, 17, and 18 depict detailed land use for the Camden, Shiloh, and South Mills communities which are the areas of the most intensive development. There are limited areas of conflicting land uses. The most serious land use conflicts include:

- Strip commercialization along US 158 in the Camden Community.
- Development of residential property in agricultural areas in all of the study areas.
- Minor infringement of non-residential uses on residential areas in the Camden Community.

Developing areas have avoided Fragile Areas, Natural Heritage Areas, and Protected Lands. Most waterfront development has occurred in the Highway 343 Corridor South area.

MAP 15 - STUDY AREAS

MAP 16 - CAMDEN EXISTING LAND USE

MAP 17 - SHILOH EXISTING LAND USE

MAP 18 - SOUTH MILLS EXISTING LAND USE

Table 40
Community/Highway Corridor Study Areas
Existing Land Use

	Camden		Shiloh		South Mills		Highway 343 Corridor South		Highway 343 Corridor North		Highway 17 Corridor		Highway 158 Corridor	
Land Use	Acreage	% of Total	Acreage	% of Total	Acreage	% of Total	Acreage	% of Total	Acreage	% of Total	Acreage	% of Total	Acreage	% of Total
Agriculture/Open Space/Low-Density Residential	1,491	80.4%	1,469	88.5%	2,447	88.6%	8,354	87.3%	1,972	94.8%	5,607	80.8%	206	96.7%
Commercial	35	1.9%	5	0.3%	35	1.3%	19	0.2%	0	0.0%	0	0.0%	0	0.0%
Multifamily	39	2.1%	0	0.0%	1	0.1%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Office & Institutional	138	7.5%	9	0.6%	17	0.6%	463	4.8%	0	0.0%	1,168	16.8%	0	0.0%
Residential	104	5.6%	180	10.8%	260	9.4%	735	7.7%	108	5.2%	164	2.4%	7	3.3%
Recreational	47	2.5%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Total	1,854	100.0%	1,663	100.0%	2,760	100.0%	9,571	100.0%	2,080	100.0%	6,939	100.0%	213	100.0%

NOTE: All study areas fall into subbasin 03-10-50 with the exception of Highway 343 Corridor South and Highway 158 Corridor. The Highway 343 Corridor South has 77% in subbasin 03-10-50 and 23% in subbasin 03-10-54. The Highway 158 Corridor has 30% in subbasin 03-10-50 and 70% in subbasin 03-10-54.

Source: Holland Consulting Planners, Inc., April 2003.

D. ANALYSIS OF EXISTING COMMUNITY FACILITIES/SERVICES

This discussion of community facilities/services includes: transportation, health care, law enforcement, fire/rescue services, administration, water system, sewage system, solid waste, schools, recreation, electric/natural gas services, and telephone/internet services. The existing community facilities section will have an impact on Section V (G), Future Demands, page 118 and Section VI, Plan for the Future, page 134. The county's growth management plan is discussed in the water and sewer sections.

Map 19 provides a listing and location of all facilities owned and operated by Camden County and the State of North Carolina.

1. Transportation

There are three major routes running through Camden County – US 17, US 158, and NC Highway 343. US 17 enters Camden County at the North Carolina/Virginia state line and continues south through the northwest portion of the county into Pasquotank County. This highway is four lanes to facilitate volumes of traffic heading south from Virginia. US 158 runs east/west between Pasquotank and Currituck counties. NC 343 runs north/south through the county, connecting South Mills with Shiloh. Another significant highway is NC 34.

According to the North Carolina Department of Transportation, Camden County has a total of 205 miles of roads of which 186 miles are paved. The 19 miles of unpaved roads are all secondary roads. Out of the total miles of paved roads, approximately 25% are primary roads and 75% are comprised of secondary roads.

The Average Daily Traffic Count along US 158 is by far the highest in the county. Another high volume traffic area is along US 17. Map 20 depicts average daily traffic counts in Camden County.

Transportation improvements are discussed on page 125 in the Future Demands section, including US 17 improvements through the Dismal Swamp and improvement to the NC 343 and US 158 intersection in the Village of Camden.

2. Health Care

Camden County residents have access to a wide range of health care services which are offered at Albemarle Hospital in Elizabeth City. The regional health care facility serves over 130,000 residents in seven counties. The hospital has 150 beds in operation and is licensed for 182. It is accredited by the Joint Commission on Health Care Organizations.

MAP 19 - COUNTY/COMMERCIAL BUILDINGS

MAP 20 - TRAFFIC COUNTS

The following is an overview of the services that the Albemarle Hospital offers:

- Urgent and emergency care
- Inpatient hospitalization
- Same day ambulatory surgery
- Mammography
- Physical therapy
- Occupational therapy
- MRI
- CT scan
- Speech therapy
- Oncology services
- Heart and lung center
- Infusion suite
- Maternity services
- Rehab services

There is one medical practice in Camden County. Albemarle Family Practice is located at 160-C Highway 158 in Camden and is open Monday through Friday. The practice consists of three doctors, one physician's assistant, and one nurse practitioner.

3. Law Enforcement

Law enforcement is provided to the entire county by the Camden County Sheriff's Department. The department staffs 13 full-time and two part-time sworn officers. The department operates three separate units: patrol, investigations, and school resource officers.

The county Sheriff's Department is located at 117 North 343 in Camden (Courthouse complex). The jail is located in Elizabeth City. It is a tri-county jail with Camden, Pasquotank, and Perquimans counties contributing a percentage of the cost to maintain the facility. The percentage that each county pays is based on the population of the county. Camden County contributes 14% of the cost. The jail has an occupancy of 80.

4. Fire/Rescue Services

Camden County is served by two fire departments and one substation. There are two fire districts: South Mills and Camden-Shiloh. South Mills Fire Department, located at 105 Halstead Street in South Mills, has 20 members. The Camden Fire Department is located at 114 Sawyers Creek Road in Camden, and the Shiloh substation is located at 941 Highway 343 South in Shiloh. The Camden-Shiloh district has approximately 40 members. Pasquotank/Camden Central Communications dispatches E911 calls for the county. The office is located in Elizabeth City.

The Insurance Services Office (ISO) of North Carolina has established a grading schedule for rural and municipal fire protection. Individual communities are surveyed by 150 representatives every nine to ten years and the grading process used considers the following:

1.	Water Supply	39%
2.	Fire Department	39%
3.	Fire Communications	9%
4.	Fire Safety Control	13%

A rating of 1 is the best possible, with the lowest rating of 10 being assigned to areas with essentially no protection. The ratings have a financial impact on property owners because fire insurance premiums depend on the grade or class assigned by the ISO. The ISO rating for South Mills is 6-9s and the ISO rating for Camden-Shiloh is 7-9s. The first number in the sequence represents the rating if a structure is within 1,000 feet of a fire hydrant. The second sequence represents the rating if a structure is beyond 1,000 feet of a fire hydrant.

Camden County is served by the Pasquotank/Camden Rescue Squad and the Pasquotank County Ambulance Service. The Pasquotank/Camden Rescue Squad is a 68-member volunteer organization. The Pasquotank County Ambulance Service has 23 paid employees. The paid employees work from 6:00 am to 6:00 pm Monday through Saturday. The volunteers work from 6:00 pm to 6:00 am Monday through Saturday, all day Sunday, and on holidays. The departments share a building and equipment. Five ambulances and four approved First Responder Vehicles are available. Both the rescue squad and the ambulance service work at a paramedic level. They are located at 1114-B North Road Street in Elizabeth City.

5. Administration

Camden County has a Board of Commissioners/County Manager form of government. The county currently has 63 full-time and 15 part-time employees. The following list provides a summary of governmental organizations and employees.

Table 41
Camden County
Employees

	Full-time Employees	Part-time Employees
Sheriff	15	3
Social Services	13	0
Waste Department	8	0
Tax	4	1
Planning	6	2
Register of Deeds	3	0
Administration	*3*	*0*

Table 41 (continued)

	Full-time Employees	Part-time Employees
Buildings & Grounds	*2*	*2*
Senior Center	1	1
Finance	2	1
Welcome Center	2	2
Elections	0	2
Extension	4	0
Parks & Recreation	0	1
Total	63	15

Source: Camden County.

6. Water System

Residents of Camden County receive water from two entities: the South Camden Water and Sewer District (SCWSD) and the South Mills Water Association (SMWA). Map 21 provides the location of these district facilities. Camden County owns the SCWSD water plant and provides the water to that district. The SCWSD has 1,800 connections in the South Camden area. The SCWSD operates a Reverse Osmosis Plant and maintains two elevated water tanks. One tank is 250,000 gallons and the other tank is 300,000 gallons.

The South Mills Water Association (SMWA) is an independent entity. The association provides water to the South Mills Township and the Morgans Corner area of Pasquotank County. The SMWA has 1,990 connections. Those connections are evenly split between the South Mills township customers and the Morgans Corner customers. The association operates a water treatment plant and has two elevated water tanks. The water tank that serves the South Mills township is 100,000 gallons. The other water tank is located in Pasquotank County.

There is a portion of the county along the Highway 158 corridor which has been annexed by the City of Elizabeth City. Water service to this area is provided by Elizabeth City. Camden County has an agreement with Currituck County to provide up to a maximum of 200,000 gallons per day at wholesale rates. Additionally, Camden County is interconnected with Elizabeth City; however, water is provided on an emergency basis only.

MAP 21 - UTILITIES

North Carolina General Statute (GS 143-355(l)) requires all units of local government that provide or plan to provide public water supply service to prepare a Local Water Supply Plan and to update that plan at least every five years. A local water supply plan is an assessment of a water system's current and future water needs and its ability to meet those needs. The SCWSD and the SMWA updated their Water Supply Plans in 1998. All water supply plan updates were required to be turned in by July 2003 based on water data from the year 2002. Both water districts have updated Local Water Supply Plans currently under review by the Division of Water Resources. Tables 42 and 43 provide summaries of the SCWSD and SMWA water use information included in the updated plans.

Table 42
South Camden Water and Sewer District
Water Usage Information

Average Daily Water Use by Month for 2002 in Millions Gallons Per Day (MGD)

Month	Average Daily Usage	Month	Average Daily Usage	Month	Average Daily Usage
January	0.230	May	0.230	September	0.274
February	0.204	June	0.245	October	0.452
March	0.204	July	0.240	November	0.389
April	0.228	August	0.280	December	0.359

NOTE: New Reverse Osmosis Plant came on line October 1, 2002; began extensive system flushing.

2002 Average Annual Daily Water Use by Type in Million Gallons Per Day (MGD)

Type of Use	Average Use (MGD)
Residential	0.150
Commercial	0.002
Industrial	0.000
Institutional	0.004
Sales to Other Systems	0.000
System Process Water	0.010
Subtotal	0.166
Average Annual Daily Water Use	0.233
Unaccounted for Water	0.067

Total Water Use for 2002 including all purchased water: 84.900 Million Gallons (MG)
Average Annual Daily Water Use in 2002: 0.233 Million Gallons Per Day (MGD)

*Preliminary 2002 data; plan under review by Division of Water Resources.
Source: NC Department of Environment and Natural Resources.

Table 43
South Mills Water Association
Water Usage Information

Average Daily Water Use by Month for 2002 in Millions Gallons Per Day (MGD)

Month	Average Daily Use	Month	Average Daily Use	Month	Average Daily Use
January	0.234	May	0.262	September	0.276
February	0.240	June	0.282	October	0.299
March	0.244	July	0.291	November	0.240
April	0.279	August	0.281	December	0.246

2002 Average Annual Daily Water Use by Type in Million Gallons Per Day (MGD)

Type of Use	Average Use (MGD)
Residential	0.215
Commercial	0.000
Industrial	0.000
Institutional	0.000
Sales to Other Systems	0.000
System Process Water	0.000
Subtotal	0.215
Average Annual Daily Water Use	0.215
Unaccounted for Water	0.000

Total Water Use for 2002 including all purchased water: 78.601 Million Gallons (MG)
Average Annual Daily Water Use in 2002: 0.215 Million Gallons Per Day (MGD)

*Preliminary 2002 data; plan under review by Division of Water Resources.
Source: NC Department of Environment and Natural Resources.

7. Sewage System

Camden County residents rely upon individual septic tanks for sewage disposal. However, the county is in the design stage of the Camden Village Core Project, a $6.6 million sewer project. This is being done in conjunction with the county's growth management plan which is the county's plan for water and sewer systems development. **This document is a facility strategy plan and not a formal policy document.** The project, approved on February 3, 2003, will provide sewer along the US Hwy 158 commercial corridor, to three schools, and to the county

administrative complex. The project is scheduled to be completed in July, 2006. Map 21 on page 91 provides the location of existing waterlines in Camden County as of January 2003.

8. Solid Waste

Camden County does not have any commercial or residential curbside pick up for solid waste. The county does have three convenience centers located throughout the county for waste disposal. These convenience centers are located to the north of the county near South Mills, to the south near Shiloh, and central Camden County near Camden. The convenience centers have facilities for the disposal of all waste including recyclables, household waste, yard waste, used oil and oil filters, and tires. The following provides the exact location of the convenience centers within Camden County:

Shiloh – 303 Wickham Road
Hours of Operation – Monday, Wednesday, Saturday 7-7 and Sunday 12-7

South Mills – 1564 North Highway 343
Hours of Operation – Monday, Wednesday, Friday, Saturday 7-7 and Sunday 12-7

Camden – 102 Water Plant Road (off Chantilly Road)
Hours of Operation – Monday through Saturday 7-7

These convenience centers are contracted out to Waste Industries. All receptacles and equipment located at the convenience centers is the property of Waste Industries. The centers are also manned by Waste Industries personnel. Once waste is delivered to the convenience centers, it is then forwarded to the Pasquotank Solid Waste Transfer Station. From this transfer station, the waste is hauled to the Bertie County Landfill. Camden County pays Waste Industries by the haul to maintain the convenience centers. Used tires are also collected at the convenience centers, but are not disposed of by Waste Industries. Carolina Tire Disposal has a truck on site; when this truck is full, the tires are removed and disposed of.

The total solid waste tonnage generated by Camden County for FY2002 was 3,148. The county also generated 240 tons of recyclables. The following table provides a breakdown of the recycled goods.

Table 44
Recycled Solid Waste Tonnage

Recyclable	Tonnage
Mixed Glass	22.5
Mixed Plastic	17.4
White Goods	65.9
Newsprint	80.1
Cardboard	54.0
Total	239.9

Source: NC Department of Environment and Natural Resources.

9. Schools

The Camden County School System oversees all public schools providing service to Camden County citizens. During school year 2003-2004, total enrollment at the county's three schools was 1,582. Table 45 provides a summary of enrollment and facilities for each of the county's schools.

Table 45
Camden County
Schools

School	Enrollment	Capacity	Recreational Facilities	Current Renovation Projects (in dollars)
Camden County High School (9-12)	457	510	Gym, athletic fields (football, softball, baseball)	$3,000,000
Camden Middle School (6-8)	405	504	Gym, athletic fields (football, softball, baseball)	$7,000,000
Grandy Primary School (K-5)	720	687	Gym (multipurpose room)	None

Source: Camden County Schools.

There are no private schools located in Camden County. There are two regional colleges located in close proximity to Camden County. Elizabeth City State University (ECSU) is a four year college located in Elizabeth City. ECSU is part of the NC University system. A wide variety of liberal arts degree programs are offered at the university. College of the Albemarle (COA) is also located in

Elizabeth City. COA is part of the NC Community College System. COA primarily offers technical and continuing education courses. East Carolina University (ECU) is another regional option for higher education. ECU is located roughly 100 miles from Camden County.

10. Recreation

Camden County operates one public park. This park is located in central Camden County along Highway 343. The park contains the following facilities: three lighted ball fields, basketball courts, tennis courts, and playground equipment. All of the ball fields located at the park are utilized for little league and girls softball.

Camden County does not have a Parks and Recreation Department. The only recreational program offered within Camden County is Babe Ruth little league baseball and softball. This program is not sponsored by the county, but all games are played at county facilities.

Camden County's residents rely on the Pasquotank County recreation facilities. The county makes an annual contribution to the Pasquotank County Parks and Recreation Department. This contribution entitles all Camden residents to use all recreational facilities and programs offered within Pasquotank County. A wide variety of recreational facilities are offered by Pasquotank County.

The county operates a public boat access ramp located in northern Camden County along Highway 343. This ramp provides access to the Dismal Swamp. There are plans to construct a second public boat access to the south near Shiloh.

The Dismal Swamp Canal Visitor Center, opened in 1989, is the first Visitor/Welcome Center built off an interstate in North Carolina and the only such facility in the country greeting visitors by both a major highway and an historic waterway. Located in Camden County on US Highway 17, the Center sits on the banks of the Dismal Swamp Canal, part of the Intracoastal Waterway. Facilities include clean restrooms open 24 hours a day, picnic tables, and grills. Expansion plans include the addition of the Dismal Swamp Canal Trail. This multi-purpose asphalt surface trail, 4.5 miles in length, will extend from the Visitor Center to the village of South Mills, along the Dismal Swamp Canal.

On the west side of the Dismal Swamp Canal is the 14,433-acre Dismal Swamp State Natural Area. Plans call for the construction of a 5,800 square foot building which will house office space, exhibits, an auditorium, and a classroom. The State Natural Area will also provide a boardwalk in the swamp with nature trails extending off the boardwalk. Future plans include walk-in

primitive camping and hiking. The State Natural Area will employ six permanent full-time employees, two rangers, two maintenance persons, an office assistant, and five to six seasonal employees.

11. Electric, Natural Gas, Telephone

a. Electric

Electric Service is provided by Albemarle Rural Electric Co-op and North Carolina Dominion Power.

b. Natural Gas

Natural Gas is currently available within the county primarily along Highway 343 near Camden. Eastern NC Natural Gas provides this service, and has plans to extend this service further into the county.

c. Telephone

Sprint Telecommunications provides telephone service to the entire county.

d. Internet Service

Several companies support access numbers for dial-up internet service in the county. However, the entire county does not have internet access.

12. Storm Water Management

a. Introduction

Storm water discharges are generated by run-off from land and impervious areas such as paved streets, parking lots, and building rooftops during rainfall and snow events. They often contain pollutants in quantities that can adversely affect water quality and create flooding problems. When roads, parking lots, sidewalks, homes, and offices replace the natural and permeable landscape, rainfall that would once soak into vegetated ground is now available for storm water runoff. As surfaces become more and more impermeable, water simply moves across them. These impermeable surfaces connect to form a storm water super highway. One of the effects of this water super highway is that more and more storm water reaches streams because

there is less opportunity for it to infiltrate the ground. Peak flows also increase, transporting runoff from large areas rapidly. Velocities in streams increase causing more erosion potential, and lastly, base flow is lower during dry weather because of a lack of infiltration. Using a traditional analysis, such as the Natural Resource Conservation Service (NRCS) storm water model, TR 55, or the United States Corps of Engineers' (USCE) many versions of HEC, it can be shown that peak flows alone can increase by as much as four times from pre-post development conditions. Flooding is the result of this urbanization.

b. Erosion and Sedimentation

Erosion and sedimentation have long been recognized as water quality concerns. The North Carolina legislature passed laws to curb sedimentation in 1973; however, sedimentation remains the number one pollutant in NC waters. In the 1990s, the focus of the Piedmont and Eastern NC watersheds turned towards excess nutrients in surface waters. The excess was due to extensive farming operations in the area. Fertilizers contain nutrients for plants to grow, but if excess fertilizer is inadvertently applied to pavement, these nutrients enter the waters during runoff periods causing harm to water quality. Even proper amounts of applied fertilizer can allow nutrients to enter streams in other ways, such as atmospheric deposition, wildlife and pet waste, and septic system malfunctions.

There are numerous ways to reduce pollutant loading. Proper application of fertilizer and proper maintenance of septic systems can reduce loading. Structural devices can also help curb this problem. These structural devices, known as Best Management Practices (BMPs), can be constructed to treat runoff, thereby reducing the amount of pollutant that enters the waterways. These BMPs include wet ponds, storm water wetlands, infiltration trenches, wells, sand filters, bioretention rain gardens, rubble spreaders, riparian buffers, and reinforcing grassy swells.

c. EPA Regulations

The Environmental Protection Agency (EPA) has begun implementation of Phase II of the Storm Water Management Plan. These policies apply to municipalities with populations greater than 10,000 and with densities of 1,000 per square mile. For municipalities that meet these parameters, submittal of a storm water management plan is required. Phase II regulations also apply to entities designated under the 1990 census as a Small MS4 (Small Municipal Separate Storm Sewer System). MS4's are defined as a publicly-owned conveyance or system of conveyances designed or used for collecting and conveying storm water. MS4's are not combined with sewer and are not part of a publicly-owned treatment facility. Municipally-owned MS4's can include counties, towns, airports, federal properties, hospitals, schools, etc. Small community

MS4's are regulated if they discharge into impaired or sensitive US waters. In addition, counties classified as a Tier 4 or Tier 5 county are regulated. At this time, Camden County is not required to meet the new EPA Phase II Storm Water Management Program regulations.

The EPA has developed guidelines for implementing the Phase II Storm Water Management Program. The storm water pollution problem has two main components: the increased volume and rate of runoff from impervious surfaces and the concentration of pollutants in the runoff. Both components are directly related to new developmental and urbanizing areas. Both components also cause changes in the hydrology and water quality that result in a variety of problems, such as habitat modification, increased flooding, decreased aquatic biological diversity, and increased sedimentation and erosion. Effective management of storm water runoff offers a multitude of possible benefits. Benefits include protection of wetlands and aquatic eco-systems, improved quality of receding water bodies, conservation of water resources, protection of public health through flood control, and improved operation and hydraulic characteristics of streams receiving run-off; all of which can cause higher peak flow rates that increase frequency and duration of bank full and sub-bank full flows. Increased occurrences in downstream flooding can also be reduced by lowering base flood levels, such as with traditional flood control methods that rely on the detention of the peak flows. They are generally not targeted to the reduction of flooding and in many cases have exacerbated the problems associated with changes in hydrology and hydraulics. The EPA recommends an approach that integrates control of storm water peak flows and the protection of natural channels to sustain physical and chemical properties of aquatic life.

The EPA has outlined six (6) steps for the development of BMP's for a storm water management plan. The six steps are as follows:

(1) Public Education and Outreach on Storm Water Impacts
(2) Public Involvement and Participation
(3) Elicit Discharge Detection and Elimination
(4) Construction Site and Storm Water Runoff Control
(5) Post-Construction Storm Water Management, and New Development or Redevelopment
(6) Pollution Prevention and Good Housekeeping for Municipal Operations

d. Construction Activities

Storm water runoff from construction activities can have a significant impact on water quality, contributing sediment and other pollutants exposed at construction sites. The NPDES

Storm Water Program requires operators of both large and small construction sites to obtain authorization to discharge storm water under a NPDES construction storm water permit. In 1990, the Phase I Storm Water Management Program regulations addressed large construction operations that disturbed five (5) or more acres of land. The NPDES program also addresses small construction activities – those that disturb less than five (5) acres of land – which were included in the Phase II final rule. Construction activities that disturb over one (1) acre of land are required to develop and implement a storm water pollution prevention plan specifically designed for the construction site. The development implementations of the plan follow the basic phases listed below:

(1) Site Planning and Design Development Phase
(2) Assessment Phase
(3) Control Selection/Design Phase
(4) Certification/Verification/Approval Phase
(5) Implementation/Construction Phase
(6) Final Stabilization/Termination Phase

e. North Carolina Shoreline Buffering

In August of 2000, the State of North Carolina developed a thirty (30) foot buffering rule for all new development in the twenty coastal counties governed by the Coastal Area Management Act (CAMA). This rule applies to all navigable waters, excluding the ocean, which has previously established setback requirements. The development of this buffer does not restrict the construction of water dependent structures, such as docks and boat ramps. The benefits of the buffering include the following:

(1) Flood Control – by reducing the velocity and providing a collection area for storm water runoff and precipitation. Buffers encourage water infiltration into the ground, rather than flooding low-lying areas.
(2) Groundwater Recharge – buffers are also beneficial to recharging the ground water supply and promoting ground water flow.
(3) Soil Erosion Prevention – vegetated buffers stabilize the soil and reduce sedimentation.
(4) Conservation of Coastal Riparian Wildlife Habitats – these natural areas provide breeding, nesting, and habitat, and protect wildlife from predication. Vegetated buffers help increase the diversity of wildlife while providing site for foraging and corridors for dispersal.

f. Storm Water Management as Related to Camden County

Camden County is a low-lying coastal county in northeastern North Carolina. The southern half of the County forms a peninsula surrounded by the North River, Albemarle Sound, and Pasquotank River. The northern portion of the County is comprised mainly of the Great Dismal Swamp. Elevations in the county range from twenty (20) feet above sea level to sea level. The southeastern quadrant of the County is comprised of a large swamp area bordering the North River. The Pasquotank River as far north as South Mills borders the western portion of the County. Creeks along the western half of the County flowing into the Pasquotank River include Mill Dam Creek, Raymond Creek, Portohonk Creek, Areneuse Creek, Sawyer's Creek, and Joyce's Creek. Approximately **67%** of the County is located in flood hazard areas. While the Phase II Storm Water regulations address flood problems associated with storm water runoff, Camden County experiences flooding problems due to the lack of ability to drain the County. The flat, low-lying nature of the land slope of the County prevents adequate runoff potential during storms.

Low-lying areas in the County present isolated pockets of flooding conditions. Numerous areas in the southern portions of the County are affected by wind tides. Southerly winds will push waters up from the sounds into these low-lying areas. The stronger the winds, the quicker the water rise. Much of the time the water comes in much faster than it can go out, creating flooding conditions. Rainfall events compound the issue. Areas affected by these wind tides are along NC Highway 343 near Shiloh, areas around NC Highway 343 and Mill Pond Road, all of the area south of Old Trap, and the Indian Town area along Trotman Road. A dike and pump system has been investigated for areas along Goose Creek. Sawyers Creek is a major drainageway for the central portion of the County. Wind tides and rains cause flooding problems along this creek as far inland as Lambs Road and the Belcross area.

Drainageway and creek carrying capacities are associated primarily with tail water conditions or a backing-up of water as a result of development and changing drainage way flow patterns. Results of this are being seen in the northern portion of the County along the Joyce Creek drainageway. It is thought that large developments north of South Mills are creating too much flow for the Cypress Run and Mill Run creeks which feed into Joyce Creek. Organizations such as Resource and Conservation Development (RC&D) have provided funds to clear and snag creeks. Edna Creek was recently cleared and snagged but more work is needed due to sedimentation buildup. It may be necessary to acquire easements along these drainage ways for proper maintenance. Refer to Map 22 for existing problem areas with regard to localized storm water flooding.

MAP 22 - STORM WATER FLOODING

New development within the County should address off-site drainage issues by analyzing the downstream conditions of the drainageway. Each project flows to one or more outlets and each outlet makes its way to one of the swamps or surface water bodies within the County. This analysis should also determine adequate water carrying capacity. The USCE HEC analysis can be used to determine drainageway patterns and locate areas where water can cause back up, thus causing flooding.

Camden County is typical of other rural areas. Most homes are located on large lots. These are generally one residential unit per acre, with a minimum lot size of 20,000 square feet. Generally, residential runoff does not pose a significant threat to fragile lands or surface waters in the County.

The applicable areas of potential stormwater flooding are depicted on the study areas existing land use maps (Maps 15, 16, 17, and 18) and on the study areas future land use maps (Maps 29, 30, 31, and 32). Policies addressing stormwater management in the village/corridor subareas and the county as a whole are identified in the stormwater control policies, page 148. In addition, the growth principles discussed in Section VI.D., page 170 will be implemented in the village/corridor subareas.

Nutrient loading of surface waters in the North Pasquotank River through storm water runoff has not generally been a significant problem in the County. The farmers and planners in the County recognize the potential dangers to the surface water area from the fertilizer nutrient loading of the drainage basins. To a great extent, they have initiated the BMP recommendations of the Soil Conservation Service.

Flooding is a potential problem in approximately **67%** of the County, according to the Floodplain Boundary map prepared by the Federal Emergency Management Agency (FEMA). Floodplain areas are essentially located along the shores of the North and Pasquotank Rivers, the Albemarle Sound, and extensive swamp areas in the northern and southern areas of the County. The greatest flood threats to the County are storm surge and wind tides, particularly in the Camden Point area. The County participates in the Federal Flood Insurance Program. In November of 1991, the County adopted a Flood Damage Prevention Ordinance.

The county is currently conducting a drainage study for the various creek watershed areas with the goal of establishing watershed districts that can generate funds for ongoing maintenance of drainage ditches and tributaries.

E. EXISTING LAND SUITABILITY ANALYSIS

A thorough analysis of all impediments to development, as well as existing community facilities, has been completed in the preceding sections. All of these variables factor into suitability for development for a specific piece of property. In order to assess what affect the various man-made and environmental constraints will have on development throughout Camden County, an overlay analysis was performed. This overlay analysis is a GIS-based process geared toward evaluating the suitability of land for development. The procedure is very similar to the practice developed by Ian McHarg, in which geospatial data layers are referenced to each other in an effort to determine what portions of a land mass appear to be the most favorable sites for a specific land use.

The overall process utilized Arcview GIS software with the Spatial Analyst extension along with data layers provided by the North Carolina Center for Geographic Information and Analysis (NCGIA). The analysis takes into consideration a number of factors, including natural systems constraints, compatibility with existing land uses and development patterns, existing land use policies, and the availability of community facilities. The end product of this analysis is a land suitability map that shows underutilized land that is suited or not suited for development (see Map 23). This map can be used as a foundation for the discussion and formation of county-wide land use policy and should be compared to the future land use map (Map 29, page 187) and the future land suitability map (Map 26, page 124). The major difference between the existing and future land suitability maps is that the future land suitability map reflects the impact of the water and sewer systems proposed to be constructed by the county.

Land suitability analysis involves the application of criteria to the landscape to assess where land is most and least suitable for development of structures and infrastructure. A computer application is not essential for this analysis, but greatly simplifies the process. There are eight key steps to completing the overlay analysis:

(1) Define criteria for the analysis
(2) Define data needed
(3) Determine what GIS analysis operations should be performed
(4) Prepare the data
(5) Create a model
(6) Run the model
(7) Analyze results
(8) Refine model as needed

MAP 23 - EXISTING LAND SUITABILITY ANALYSIS

All of these steps have been completed, and as noted above, the end product is displayed on Map 23. There were no additions or adjustments to the default layer sets and weighting factors provided by the Division of Coastal Management to the county for the existing land suitability analysis map. Prior to producing the map, data was compiled and each data layer in conjunction with criteria was assigned a weight. The county was then divided into one-acre squares. Each of these one-acre squares of land was given a score based on how that respective piece of property related to each data layer. The score for each data layer was multiplied against that given layer's weight. The scores for each layer were added together to determine a suitability rating for that one-acre square of property. The suitability rating falls into four primary categories: least suitable, low suitability, medium suitability, and high suitability.

The following table summarizes all data layers used, including the criteria and weight assigned to each layer.

Table 46
Land Suitability Analysis Criteria Table

		Criteria and Rating				
Layer Name		Least Suitable	Low Suitability	Medium Suitability	High Suitability	Assigned Weight
		0	-2	1	+2	
Coastal Wetlands	Exclusion*	Inside	--	Outside	--	
Exceptional & Substantial Non-Coastal Wetlands	Exclusion*	Inside	--	Outside	--	
Estuarine Waters	Exclusion*	Inside	--	Outside	--	
Protected Lands	Exclusion*	Inside	--	Outside	--	
Storm Surge Areas	Weighted	--	Inside	--	Outside	2
Soils (Septic Limitations)	Weighted	--	Severe	Moderate	Slight	2
Flood Zones**	Weighted	--	Inside	--	Outside	2
HQW/ORW Watersheds	Weighted	--	Inside	--	Outside	1
Natural Heritage Areas	Weighted	--	<500'	--	>500'	1
Hazardous Substance Disposal Sites	Weighted	--	<500'	--	>500'	1
NPDES Sites	Weighted	--	<500'	--	>500'	1
Wastewater Treatment Plants	Weighted	--	<500'	--	>500'	1
Discharge Points	Weighted	--	<500'	--	>500'	1
Land Application Sites	Weighted	--	<500'	--	>500'	1
Developed Land	Weighted	--	>1 mi	.5 - 1 mi	<.5 mi	1

Table 46 (continued)

Layer Name		Criteria and Rating: Least Suitable	Low Suitability	Medium Suitability	High Suitability	Assigned Weight
		0	-2	1	+2	
Roads	Weighted	--	>1 mi	.5 - 1 mi	<.5 mi	2
Water Pipes	Weighted	--	>.5 mi	.25 - .5 mi	<.25 mi	3
Sewer Pipes	Weighted	--	>.5 mi	.25 - .5 mi	<.25 mi	3

*Data layers that are slated as exclusion have a suitability of 0 or 1, meaning that if a specific one-acre piece of property falls within one of these areas, it is automatically considered least suitable for development.
****NOTE: October 2004 flood data utilized.**

Source: NCGIA and CAMA.

Overall, land in Camden County is predominantly unsuitable for development. Tables 47, 48, and 49 provide a summary of land suitability acreage based on the results of the overlay analysis. The majority of the land within the county determined to have a high suitability rating is located around the communities of Shiloh, Camden, and South Mills. A large percentage of the land cover within Camden County is comprised of wetlands. Thus, large portions of the county are automatically considered unsuitable for development regardless of how these areas relate to the rest of the factors in consideration. Existing developed areas have not been excluded.

Table 47
Camden County Acreage

Suitability	Acreage	% of Total
Least Suitable	86,678	57.6%
Low Suitability	21,058	14.0%
Medium Suitability	23,081	15.3%
High Suitability	19,740	13.1%
Total	150,557	100.0%

Source: Holland Consulting Planners (April, 2003); North Carolina Center for Geographic Information and Analysis.

Table 48
Subbasin 03-01-50 Acreage

Suitability	Acreage	% of Total
Least Suitable	61,921	55.3%
Low Suitability	14,908	13.3%
Medium Suitability	18,796	16.8%
High Suitability	16,255	14.5%
Total	111,880	100.0%

Source: Holland Consulting Planners (April, 2003); North Carolina Center for Geographic Information and Analysis.

Table 49
Subbasin 03-01-54 Acreage

Suitability	Acreage	% of Total
Least Suitable	24,742	64.0%
Low Suitability	6,150	15.9%
Medium Suitability	4,285	11.1%
High Suitability	3,485	9.0%
Total	38,662	100.0%

Source: Holland Consulting Planners (April, 2003); North Carolina Center for Geographic Information and Analysis.

F. CURRENT PLANS, POLICIES AND REGULATIONS

Camden County has an active seven member Planning Board which works with the County Commission to oversee the county's land use management program. The county currently utilizes Title XV, Chapter 151 of the Camden County Code, adopted January 1, 1998, as the basis for all land use regulation. This Code is a culmination of several stand-alone documents that have been adopted and amended over time. Zoning was originally adopted by the county in 1972. Since that time the Code has undergone several revisions, with major updates taking place in 1993 and 1998, in conjunction with adoption of the Code.

The following provides a summary of the county's land use related codes, ordinances, and plans.

1. Camden County Code (Title XV, Land Usage)

Camden County Code, Title XV, governs all land development within the county. Chapters included in this section are: Chapter 150 – Building Regulations, Construction; Chapter 151 – Unified Development; and Chapter 152 – Watershed Protection.

Camden County adopted its first zoning ordinance and subdivision regulations in 1972. The zoning ordinance underwent significant revisions in 1993, and new subdivision regulations were adopted in 1990, re-enacting portions of the 1972 regulations. Both of these documents were included in the establishment and adoption of the current Camden County Code. Recently the county established community appearance standards that are included in Chapter 151 of the Code.

The zoning portion of the Code breaks the county into the following zoning districts.

Table 50
Zoning Districts and Acreage

Type of Development	Zoning Category	Acreage	% of Total Acreage
Community Core	CCD	377	0.25%
General Use	GUD	110,972	73.71%
Highway Commercial	HC	1,153	0.77%
Light Industrial	I-1	5,237	3.48%
Heavy Industrial	I-2	41	0.03%
Marine Commercial	MC	381	0.25%
Neighborhood Commercial	NCD	13	0.01%
Planned Residential Development	PUD	185	0.12%
Residential 1	R-1	793	0.53%
Residential 2	R-2	4,481	2.98%
Residential 3-1	R-3-1	3,027	2.01%
Residential 3-2	R-3-2	23,897	15.87%
Total		150,557	100.00%

Source: Camden County and Holland Consulting Planners, Inc. (April, 2003).

Map 24 can be referenced for the location of these districts. A majority of the county is zoned for General Use. This zoning class was established to allow for very low residential development along with a variety of agricultural uses. The Planning Board reviews all proposed developments and changes to the Code, and forwards their recommendation to the County Commissioners, who ultimately decide on approval. Prior to a hearing by the Planning Board, county staff reviews all proposed developments to assess compliance with all regulations outlined in the Code. In the event of an appeal, variance, or conditional use request, the county has a Board of Adjustment.

In addition to zoning and subdivision regulations, the Camden County Code provides guidelines for development and land use in all of the following areas:

- Streets and Sidewalks
- Parking
- Landscaping and Shading Requirements
- Utilities
- Open Space and School Sites
- Supplemental Use Regulations
- Planned Unit Development Regulations
- Conditional and Special Use Regulations
- Floodplain, Drainage, and Storm water Management Regulations
- Signs

2. North Carolina Building Code

Camden County adopted and put into use the North Carolina Building Code in 1982. The county has adopted in their entirety the North Carolina State Building Code, North Carolina Heating Code, North Carolina Electrical Code, and the North Carolina Uniform Residential Building Code.

The county's building codes establishes regulations for the following:

(1) The location, design, materials, equipment, construction, reconstruction, alteration, repair, maintenance, moving, demolition, removal, use and occupancy of every building or structure or any appurtenances connected or attached to such building or structure;

MAP 24 - ZONING DISTRICTS

(2) The installation, erection, alteration, repair, use and maintenance of plumbing systems consisting of house sewers, building drains, waste and vent systems, hot and cold water supply systems, and all fixtures and appurtenances thereof;

(3) The installation, erection, alteration, repair, use and maintenance of mechanical systems consisting of heating, ventilating, air conditioning and refrigeration systems, fuel burning equipment, and appurtenances thereof; and

(4) The installation, erection, alteration, repair, use and maintenance of electrical systems and appurtenances thereof.

The county building inspector is designated to enforce all of the county's building regulations.

3. Septic Tank Regulations

The District Health Department enforces regulations (Title 10 of the North Carolina Administrative Code) which control development density in Camden County. The regulations establish minimum lot sizes and permissible soil conditions for the installation of on-site sewage disposal systems of less than 3,000 gallons. The minimum lot size for septic tank approval in the county is 15,000 square feet for lots served by public water and 20,000 square feet for those using on-site water supplies. These standards are county-wide minimums and are contingent on certain soil conditions and the drainage characteristics of the building site.

4. National Flood Insurance Program

Camden County is a participant in the Regular Phase of the National Flood Insurance Program. Enrollment in the Regular Phase of the National Flood Insurance Program is initiated by a voluntary agreement between the local jurisdiction and the federal government. It is agreed that if a community implements and enforces measures to reduce the risk from flooding in special flood hazard areas, the federal government will make flood insurance available within the community to mitigate future flood losses. As required by the NFIP, the county has adopted a flood damage prevention ordinance that is included in the UDO. This ordinance assures that the ground floor of all structures located in FEMA-designated 100-year flood zones have a base floor higher than the defined 100-year flood elevation.

5. Review of the 1993 Camden County Land Use Plan Update

Camden County completed a CAMA Land Use Plan that was approved by the Coastal Resources Commission on July 29, 1988. In 1993, this plan was updated and was approved on July 29, 1994. This document has served as the county's primary land use management guide since 1994.

The 1993 Camden County CAMA Land Use Plan included 30 specific implementing actions. Camden County has been extremely successful in implementing the 1993 plan. Therefore, the county believes the 1993 policies have been effective. Of the 30 actions, 27 have either been accomplished or are in progress. These are listed below. The success at implementing the 1993 policies indicates that the policies were clear and effective. The few which have not been accomplished will be addressed in the policy action section of this plan. This list is a reproduction of the text from the 1993 plan. **NOTE**: there are duplications in the text of the 1993 plan.

The 1993 Land Use Plan land use categories were developed to be consistent with the county's zoning patterns. However, the reader is cautioned that because of the general indication of land use on the 1993 existing land use maps, direct comparison to the zoning map is not possible.

ACCOMPLISHED

1. The County will rely on the North Carolina Department of Environment and Natural Resources, Division of Coastal Management, to regulate development in coastal wetlands and along estuarine shorelines and to protect estuarine waters through the CAMA permitting process. Also, it will rely on the regulations of other state and federal agencies with regulatory authority, as well as on existing local development regulations to mitigate threats to AEC's.

2. The County will monitor development proposals for compliance with Section 404 of the Clean Water Act and will continue to enforce local land use ordinances.

3. The County will guide development so as to protect historic and potentially historic properties in Camden County and to perpetuate the County's cultural heritage.

4. The County will utilize its development controls and will rely on state and federal agencies with jurisdiction to minimize the impact of man-made hazards.

5. The County will strictly enforce lot size requirements and rely on the District Health Department to oversee and regulate septic tank installation and operation. The County will consider seeking financial assistance from state and federal agencies to construct sewage facilities to correct critical sewage disposal problems. The County will prepare and adopt an ordinance and management plan as required by the Water Supply/Watershed Protection Act in 1993-94.

6. The County will rely on the Division of Environmental Management to oversee the operation and management of all package treatment plants in the County.

   The County will support investigations by the District Health Department and North Carolina State University concerning the use of package treatment plants as a method of solving some of the severe sewage disposal problems in several of its communities.

7. The County will rely on existing land use controls to regulate the amount and percentage of building coverage on any developable lot. It may also consider additional regulations to control the amount of impervious surfaces that may be permitted on a building lot and may choose to require drainage plans prior to the approval of major subdivision developments.

8. The County will encourage local farm organizations to maintain on-going educational programs and demonstrations that will keep farmers informed of best management practices and available assistance.

9. The County will rely on local, state, and federal agencies with regulatory authority to regulate marinas, dry stack storage facilities, and floating homes within its borders.

10. The County will continue to enforce the Flood Plain Ordinance and participate in the Regular Phase of the National Flood Insurance Program. It will rely on the North Carolina Department of Environment and Natural Resources, Division of Coastal Management to monitor and regulate development in areas up to five feet above mean high water susceptible to sea level rise and wetland loss.

11. The County will rely on state and federal agencies with jurisdiction to regulate upland excavation for marina basins. It will encourage such activities in cases where intrusion of marina facilities into a waterway would interfere with the use of the waterway by the general public.

12. The County will rely on the Department of Environment and Natural Resources, Division of Coastal Management to monitor and regulate bulkheading activities.

13. The County will continue to participate in the regular phase of the Federal Flood Insurance Program and to enforce the Flood Damage Prevention Ordinance. Subdivision regulations will be enforced – requiring elevation monuments to be set so that floodplain elevations can be more easily determined.

14. The County will complete the rewrite of its zoning regulations and adopt same in 1993 and will enforce these and other land use regulations to minimize the sacrifice of prime agricultural lands for other uses.

15. The County will enforce its zoning regulations and rely on state permitting agencies to regulate mining activities.

16. The County will enforce its zoning regulations and seek assistance from the Department of Environment and Natural Resources to develop additional public accesses and boat ramps. It will rely on state and federal agencies to promote and protect the Great Dismal Swamp, as well as other nursery and habitat areas.

17. The County will continue to encourage the use of best forest management practices.

18. The County will continue to maintain the Industrial Development Committee and seek grant monies to encourage and promote economic and industrial development through advertising, land acquisition, and infrastructure improvements. It will encourage the creation of investment clubs by the private sector to make start-up monies available to new businesses. It will support the recruitment and siting of commercial and industrial establishments in areas already similarly developed and in public or private industrial parks that may develop.

    It will also encourage the preparation and distribution of materials such as the pamphlet "Camden County, North Carolina – A Great Alternative" which serve to highlight the County's location, transportation system, and proximity to institutions of higher learning.

19. The County will complete the south Camden water system project and encourage the private development of compatible central water systems for new developments through the development review policy. The County will rely on its existing land use and development ordinances to regulate these developments and may amend or modify

regulations to encourage or require the provision of central water service to lots or parcels proposed in new developments. The County will investigate, with the Institute of Government, the use of impact fees as a way of making new development pay for the services demanded. The County will continue to provide solid waste disposal, law enforcement, and educational services to all developments in the County at current service levels.

20. The County will complete the review and rewrite of its zoning regulations in 1993. It will enforce zoning regulations and maintain a qualified professional staff and may employ a planner to administer and enforce the regulations necessary for orderly growth and development. It will also maintain the Industrial Development Committee and seek grant monies to encourage and promote economic and industrial development.

21. The County will seek state and federal financial and technical assistance for community improvements. The County may apply for a Community Development Block Grant for the rehabilitation of areas of substandard housing after identifying same. The County will continue to enforce the Camden County Housing Code and support the regulatory efforts of the District Health Department.

22. The County, through its boards, commissions, and committees, will monitor state and federal programs and regulations. It will use opportunities as they are presented to voice support for or to disagree with programs and regulations that are proposed by state and federal agencies.

23. The County will continue to maintain the Industrial Development Committee and seek grant monies to encourage and promote economic and industrial development.

24. The County may investigate strategies such as providing self-guided tour materials or promoting and cooperating with the functions and committees of area chambers of commerce to increase tourist activity at its historic sites. It will continue to support the Great Dismal Swamp Visitor/Welcome Center.

    The County will work with the Tourism Division of the Northeastern North Carolina Economic Development Commission as it studies how the County can be a productive part of the "Partnership for the Sounds" being marketed by the Tourism Division.

The County will investigate amendments to existing development regulations to require developers to donate funds or land for the provision of public waterfront access in the next two years – beginning with the Subdivision Ordinance. Should suitable sites for accesses become available, the County will apply for grant monies to construct same. It will lobby state legislators to support amendments to funded access programs to also include inland waters.

25. The County will complete the review and rewrite of its zoning ordinance and adopt a revised ordinance in 1993. It will enforce its zoning, subdivision, and other land use regulations, relying on state and federal agencies and personnel when and where applicable. It also will maintain a qualified professional staff and may employ a planner to administer and enforce the ordinances necessary for orderly residential growth and development.

26. A Public Education and Citizen Participation Plan was approved by the Camden County Board of Commissioners on March 1, 1993. It was designed to give citizens and interested parties opportunities to voice their views on land use policy issues throughout the 1993 Camden County Land Use Plan Update.

    Three public informational meetings were held on March 22, 23, and 24, 1993 by (or for) the Camden County Planning Board to receive some initial input from citizens and interested parties regarding issues and areas of concern. The issues and areas of concerns discussed at these and subsequent meetings were considered by the Planning Board and the Board of Commissioners as policies and implementation strategies were developed for the 1993 Update.

27. With respect to the threat of high winds, Camden County will follow and enforce the North Carolina State Building Code and requirements regarding design for high velocity winds. The County will enforce tie-down requirements for mobile homes. It will also enforce construction and mobile home installation standards for 100-mph winds.

    With respect to flooding, the County will support the hazard mitigation elements of the National Flood Insurance Program. Camden County will enforce regulations regarding elevation and flood-proofing of buildings and utilities. The County will support the CAMA and 404 Wetland Development permit processes.

Regarding the effects of wave action and shoreline erosion, the County will continue to support the Department of Environment and Natural Resources, Division of Coastal Management and CAMA permitting procedures. It also supports FEMA's regulations concerning elevation and setbacks.

NOT ACCOMPLISHED

1. The County will encourage a county-wide survey of historical sites by local volunteers or state and federal agencies and will seek grant monies within the next two years for the complete inventory of historically significant structures and sites.

2. The County will take a more active stance regarding the state permitting authorities and their oversight of mining activities by communicating grievances to the appropriate state agencies and officials.

3. The County will seek educational grants to subsidize continuing education at nearby colleges and universities and support community education programs.

G. FUTURE DEMANDS

1. Introduction

The following section serves to provide a basis for future demands on the County's infrastructure. Future demands on County services and infrastructure have been estimated based on future growth projections. This review takes into account several factors including local objectives concerning growth as well as foreseeable social and economic change.

If growth within the county is not properly accommodated and thoughtfully channeled, the County's ability to provide schools, social services, law enforcement, utilities, recreation, historical preservation, and other important, essential government services may be jeopardized. On May 13, 2004, the County adopted an ordinance establishing a moratorium for a period of 365 days from the date of adoption. The moratorium shall exist on the approval of any residential subdivisions consisting of the creation of two (2) lots plus residual or more, which had not received a sketch plan prior to November 17, 2003. During the period of this moratorium, the planning staff of the County will expeditiously study, review, and recommend to the Board of Commissioners such procedures as will ensure a responsible, safe, and healthy pattern of growth for the County. Such recommendations shall include, but not be limited to, the adequacy of

County infrastructure to serve continued growth, the appropriateness of new or amended ordinances, the deletion of existing ordinances, better staff utilization, the existence and effect of current and projected growth patterns, traffic impacts arising from subdivision development, water availability and quality, and any other relevant topics which may assist in the preservation and protection of the health, safety, and welfare of the citizens of Camden County.

2. Future Land Use Needs

a. Housing Trends

Over the last five years, Camden County has issued an average of 152 residential building permits per year. This average includes single-family development, Class A and B mobile homes, and modular units. Residential growth has remained steady over this period, and can be expected to continue at this rate during the planning period. According to the land suitability analysis presented earlier in the plan, there are 43,186 acres of land (28.7% of the total County) with a land suitability rating of medium or high. Of this acreage, 38,158 acres are residentially zoned. Although the highly suitable land appears to be distributed fairly evenly throughout the county, these areas generally follow the county's major highway corridors. Future residential growth is expected to occur along these corridors as well as in the Villages of Camden, Shiloh, and South Mills. One factor influencing this growth is commuters moving into the County from the Tidewater Virginia area.

It should also be noted that the City of Chesapeake commissioned a study through the Urban Land Institute which was published in January, 2003. This study addressed a large 4,000 acre tract of land located along the North Carolina-Virginia border. The tract of land is referred to as the Williams tract. A small portion of the total tract extends into Camden County. Presently, it is unclear if the Camden County portion of the property will be developed. The City of Chesapeake has targeted this piece of property as a possible location for a node of economic and residential growth. The Urban Land Institute study has recommended the site as an appropriate location for a new mixed-use development. The majority of the property should be utilized for residential purposes, but it also offers opportunities for "clean" industrial, commercial, and institutional uses. The Urban Land Institute has listed Camden County as a possible source for utilities during the initial phases of development.

b. Commercial Land Use

Commercial land use patterns throughout Camden County are not expected to undergo any drastic changes during the planning period. According to the existing land use survey

discussed earlier in this plan, Camden County currently has 122 acres of commercial land. Most of these commercial properties are located in the Camden and South Mills townships. Additionally, there are 1,547 commercially zoned acres of land in the County. Approximately 75% of the commercially zoned property in this area is designated as a Highway Commercial district. The remaining commercial zoning districts are designated as Community Core, Neighborhood Commercial, and Marine Commercial. These remaining districts combined only make up roughly 0.05% or 770 acres within the County. The table below provides the intended uses within each of these districts. This indicates that future commercial growth will be concentrated primarily along the Highway 17 corridor in South Mills, and the Highway 158 corridor which runs through the Camden Township.

Table 51
Camden County
Commercial Districts

District	Intended Use
Highway Commercial	This district is designed to provide for and encourage the proper grouping and development of roadside uses which will best accommodate the needs of the motoring public along US 17, US 158, and NC 343.
Community Core	This district is designed to provide the core commercial use in the County's three villages (Camden, Shiloh, and South Mills) to help meet social, shopping, employment, and some housing needs of the County's rural residents in a village-type environment.
Neighborhood Commercial	This district is designed primarily to encourage the concentration of commercial facilities, as necessary, outside the community core villages but still in clusters and to provide readily accessible shopping facilities for rural residents.
Marine Commercial	This district is designed to provide for the development of businesses which depend upon or are significantly related to waterfront and tourist locations.

Source: Camden County Code.

As shown earlier in Table 19, the Camden County population can be expected to increase by approximately 1,529 persons by the year 2015. While it is impossible to convert this population increase into an accurate forecast of increased commercial acreage, the population increase is generally indicative of the commercial land use increase which may be expected to occur. It can be assumed that commercial development within the County will continue to grow at a fairly slow pace. A majority of Camden County residents will continue to rely on retail centers and services provided across the Pasquotank River in Elizabeth City.

c. Industrial Land Use

As discussed in the existing land use analysis section, there is limited industrial land use within Camden County. In fact, industrial land use occupies only 0.92% or 1,381 acres of the entire County. It is anticipated that active industrial recruitment efforts will result in some growth to the industrial sector within the County during the planning period.

The County zoning map classifies 3.48% (5,237) of the County as Light Industrial, and 0.03% (41 acres) as Heavy Industrial. These industrially zoned properties are located in the northern portion of the County along Highway 17, and along Highway 158 east of Camden. There are plans for the development of an industrial park adjacent to the proposed Camden County Landfill. The plans for this park are still in development; however, the anticipated completion date will be during FY05-06. Refer to Map 25 for the locations of both the proposed Industrial Park and the Camden County Landfill.

d. Future Land Suitability

In order to gauge the effect that proposed water and sewer service improvements will have on development within Camden County, the Land Suitability model was run to include the locations of these improvements. There were no additions or adjustments to the default layer sets and weighting factors provided by the Division of Coastal Management to the county for the existing and future land suitability analysis maps. The same model was used that was discussed earlier in the plan; however, the proposed improvements were added. Table 52 and Map 26 provide the results of the new analysis, as well as a comparison to the results of the original LSA model (refer to the existing land suitability map on page 105 for a visual comparison). The amount of acreage determined to be highly suitable for development through running the future model increased slightly. This increase can be attributed to the installation of sewer along the Highway 343 corridor. Other than the effect that the proposed sewer installation will have on the Highway 343 corridor, land suitability throughout the rest of the county remained consistent. **(NOTE: The October 2004 flood data was utilized to produce the future land suitability analysis map.) Because of severe limitations for development, the extension of sewer and water service north of the proposed wastewater treatment sprayfield will not have any significant implications for development, especially west of US 17 in the Dismal Swamp.**

MAP 25 - LANDFILL/INDUSTRIAL PARK

Table 52
Camden County
Future Land Suitability

	Existing		Future	
Camden County Acreage	Acreage	% of Total	Total Acres	% of Total
Least Suitable	86,678	57.6%	86,678	57.6%
Low Suitability	21,058	14.0%	20,480	13.6%
Medium Suitability	23,081	15.3%	17,515	11.6%
High Suitability	19,740	13.1%	25,884	17.2%
Total	150,557	100.0%	150,557	100.0%

	Existing		Future	
Subbasin 03-01-50	Acreage	% of Total	Total Acres	% of Total
Least Suitable	61,921	55.3%	61,921	55.3%
Low Suitability	14,908	13.3%	14,330	12.8%
Medium Suitability	18,796	16.8%	13,230	11.9%
High Suitability	16,255	14.5%	22,399	20.0%
Total	111,880	100.0%	111,880	100.0%

	Existing		Future	
Subbasin 03-01-54	Acreage	% of Total	Total Acres	% of Total
Least Suitable	24,742	64.0%	24,742	64.0%
Low Suitability	6,150	15.9%	6,150	15.9%
Medium Suitability	4,285	11.1%	4,285	11.1%
High Suitability	3,485	9.0%	3,485	9.0%
Total	38,662	100.0%	38,662	100.0%

Source: Holland Consulting Planners (April, 2003); North Carolina Center for Geographic Information and Analysis.

MAP 26 - FUTURE LAND SUITABILITY ANALYSIS

3. Future Infrastructure/Community Facilities Needs

a. Transportation

There are several construction projects included in the current North Carolina Department of Transportation's (NCDOT) Transportation Improvement Program (TIP). These projects will serve to address bridge and highway improvements throughout the County. The following table provides a summary of all projects to be completed under NCDOT's current TIP. Map 27 provides the location of these projects within the County. It is emphasized that improvements are needed to the NC 343/US 158 intersection.

Table 53
Camden County
NCDOT TIP Projects

Project Number	Location*	Description	Length (Miles)	Total Est. Cost (Thousands)	Schedule
R-2574	US 158	East of NC 34 at Belcross in Camden County to NC 168 in Currituck County (widen to multiple lanes)	10.1	$38,200	To be completed outside of the current TIP planning period of 2010
R-2414	US 158 to NC 34	East of Pasquotank in Elizabeth City to east of NC 34 in Belcross (widen to multiple lanes)	5.6	$20,625	In Progress (Acquisition) – Construction FY04 – FY06
B-4451	NC 343	Jarvis Creek Replace Bridge No. 21	N/A	$660	FY06 – FY07
B-4452	NC 343	Sawyer Creek Replace Bridge No. 20	N/A	$880	FY06 – FY07
B-3426	SR1224	Joyce Creek Replace Bridge No. 2	N/A	$415	Under Construction
B-4453	SR 1235	Creek Replace Bridge No. 19	N/A	$660	FY07 – FY08
E-4504	US 17, US 17 Bus., SR 1243 (Mullen Road)	Virginia State Line to Village of South Mills (construct multi-use path)	N/A	$1,085	In Progress

*Location of these projects are shown on Map 27.
Source: NC Department of Transportation TIP.

MAP 27 - TIP PROJECTS

Projects R-2574 and R-2414 on US 158 will improve traffic flow and lessen congestion. The E-4504 project on US 17 **is an NCDOT Enhancement Project intended to improve pedestrian and bicycle access to Camden County**.

b. Education

The Camden County School System received a $17 million grant to be used for the renovation of all three schools in the system. Existing school capacity is discussed on page 95 of this plan. Renovations for Grandy Primary School, Camden Middle School, and Camden High School are essentially complete.

The Superintendent appointed a Steering Committee comprised of a cross-section of the community to prepare a strategic plan for the school system. The plan addresses the mission and vision of the school system. In addition, the plan outlines action plans to be undertaken that will help the school system maintain high quality education for the youth in the County.

The Camden County Schools Mission Statement is as follows:

> *Through a passion for student-centered learning, the Camden County School System will provide educational opportunities that will create students who can compete and flourish in an ever-changing global society.*

The school system began implementation of a five-year Technology Plan in 1995. A technology task force was assembled to update that plan in 2002. The mission of the plan is to assess the current situation of technology, create and/or modify the vision for future needs, and evaluate current progress. Additionally, the county is currently in the planning phase for construction of a new Grades 3-5 school with an estimated cost of $7,561,733.

Camden County prepared a school population projections report. According to the report, upon build-out of the following subdivisions: Wharf's Landing, Camden Plantation, Raymond's Creek, Tall Tree Commons, Deerfield Manor, Bell Farm Estates, Eddie's Acres, Magnolia Manor, Pine Ridge, Tar Corner, Danson's Grant, Sawyer's Creek Landing, Bartlett's Landing, and Taylor's Beach Landing, the existing schools serving Camden County citizens will be at or over capacity. **(NOTE: A total of 675 buildable lots are anticipated for these subdivisions, as indicated in Appendix VII.)**

c. Recreation

As discussed earlier in the plan, Camden County currently operates one public park. The County has an intergovernmental agreement with Pasquotank County permitting the use of all recreational facilities for Camden County residents. The County does not currently have a Parks and Recreation Plan, and there are no plans to expand their recreational services. Residents will continue to have full access to all outdoor recreational facilities located at each of the County's three public schools.

d. Water System

The most significant demand for water service expansion is along Highway 17 in the northern portion of the County. This project will include 73,000 feet of 12-inch water main from Burnt Mills to the North Carolina/Virginia border along Highway 17, and a 300,000 gallon elevated water storage tank in the South Mills area of the County. The cost of this project was estimated at $3,800,000.

In addition to these improvements, funding will also serve to expand the South Camden Water & Sewer District Reverse Osmosis Plant. The plant is expandable to twice its current capacity of 576,000 GPD. This expansion will assist in providing services to both the growing residential customers within Camden County, as well as the regional water supply system to Currituck County. The County is currently working to secure funding through a variety of agencies to complete this project. Refer to Map 28 for the location of all proposed water system improvements. The cost of this project was estimated at $4,000,000. All improvements are expected to be completed by FY04.

e. Sewer System

Camden County does not currently provide any sewer service throughout the county. In 2001, Hobbs, Upchurch & Associates, P.A., prepared a report to address the sewer needs within Camden County. The report recommended that the County pursue land application of the treatment, and that the land application site be located in the central portion of the County. The project was presented to state funding agencies, and state officials recommended the land application scenario, even though this scenario will cost roughly $6 million more than alternative solutions.

MAP 28 - FUTURE INFRASTRUCTURE

The report also addressed what areas will be considered for service **including the village/corridor subareas**. The study recommended Phase I to run down Highway 158 from the railroad tracks to the medical park. This phase would also include all three schools and the Courthouse.

The total cost of this project is estimated at $6,500,000 which the County has secured through a combination of funding sources in order to begin work on sewer installation. The sewer plant will be built using reuse standards. The site was selected near the intersection of Highway 17 and Keeter Barn Road. **This requires sewer lines along US 17 and these lines will extend to the North Carolina-Virginia state line. The extension of lines to the state line will help serve a 4,000-acre development to be located in the City of Chesapeake (see policy P.16 on page 143).** The spray field will be located at the intersection of Highway 17 and McPherson Road. The County has purchased 350 acres for land application. The projected completion date for the first phase of the project is July, 2006.

Future phases will encompass all of the following proposed service areas: the Highway 158 corridor out to Belcross, the Country Club Road area, the Piney Acres area, and the White Hall Shores area.

An additional report was prepared by Hobbs, Upchurch in 2002. This report looked at providing service to the commercial area along Main Street in South Mills, as well as the developed area in and around South Mills. The report recommends installing gravity sewer to Main Street at a cost of $3,300,000. These improvements would also include an expansion to the proposed wastewater treatment facility. The County is in the process of identifying a funding source for this phase of the sewer installation. Refer to Map 28 on page 129 for the location of the proposed County sewer system. **This map provides anticipated primary sewer line locations. In the future, service lines may extend from these main service lines. The village/corridor future land use maps delineate the proposed water and sewer line locations.**

The reports prepared by Hobbs, Upchurch and Associates were based on the following assumptions: (1) growth occurring in these areas to warrant the new system, and (2) securing the funding to pay for the improvements.

f. Storm Drainage

Camden County will rely on existing land use controls to regulate and monitor total percentage of building coverage on undeveloped lots. The County will encourage local organizations to maintain ongoing educational programs and administration that will keep

farmers informed of Best Management Practices (BMPs) and available assistance. The County will continue to participate in the regular phase of the Federal Flood Insurance Program, and to enforce the Flood Damage Prevention Ordinance. Developers should be required to model downstream drainage conditions to prevent flooding conditions as a result of additional impervious surface area. Developers may be required to acquire the necessary easements along drainageways for ongoing maintenance programs.

The County recently received a grant from the NC Division of Water Resources to perform the Camden County Drainage and Floodway Study. The purpose of the study is to provide an analysis of drainage and floodway issues within the county. The county is receiving assistance from the Albemarle Resource and Conservation Development and the Natural Resource Conservation Service. Phase I of the plan consists of establishing base levels for water management and determining places for conservation measures to be installed. Phase II, occurring simultaneously with Phase I, involves the county's establishment of Special Use Water Management Districts. These districts are based on the watersheds and/or the amount of area the county wants to include in each district. Phase III involves setting priorities for water management projects. Taxes obtained through the special use districts will be used to address the priorities. At the time this plan was written, Phases I and II were underway. The project is expected to be completed by late summer 2005.

g. Solid Waste

As noted earlier in the plan, Camden County utilizes the Pasquotank County Transfer Station to ship all solid waste to the Bertie County Landfill. The waste is collected from three different convenience centers located throughout the County. All of these convenience centers are operated by Waste Industries.

Camden County is currently in the planning phase of establishing a landfill in the northern portion of the County. The site for the landfill is a 330-acre piece of property located in northern Camden County along the North Carolina/Virginia border. The landfill should be completed within five years. Once the facility is opened, all solid waste from the County convenience center will be transferred to the Camden County Landfill. Waste Industries will still operate the convenience centers. The only change with respect to the convenience centers will be a change in location for the center located on Highway 117 North. This center will be relocated to Chantilly Road. No details have been finalized, but the Camden County Landfill will also accommodate waste from out of state. As the County proceeds through the landfill project, specific details about which counties will be utilizing these services will be available. See Map 25 on page 122 for the location of the Landfill.

Issues associated with the new landfill site include:

- Buffering from adjacent land uses, especially residential development.
- Added truck traffic on US 17.
- Protection of groundwater resources.
- Regulation of stormwater runoff.

h. Law Enforcement

The Camden County Sheriff's Department operates three separate units: patrol, investigations, and School Resource Officers. There are currently 13 full-time and two part-time sworn officers. The County Sheriff recently completed a Manpower Plan with the help of the County Commission that outlines the expansion necessary to accommodate increasing law enforcement needs within the County. This plan recommends adding one full-time sworn officer per year. The Sheriff's Department annually seeks grant funding through several North Carolina agencies to be used for the hiring of additional officers and purchasing equipment. Although these programs require matching funds, it drastically decreases the total cost of these expenses on the County. The Department has secured funding over the last year for an additional School Resource Officer through the Universal COPS Hiring Program, and currently has another application in for one more additional officer in this unit. The Sheriff anticipates hiring a total of three additional officers over the next fiscal year. Additional office space for the Sheriff's Department must be provided.

i. Fire and Rescue Services

Camden County is served by two fire districts. The Camden-Shiloh District recently constructed a new fire station in Camden and has plans to construct a new facility in Shiloh. Construction on the new station should begin within the next three to four years. In addition to construction, the District plans to upgrade trucks and gear in the same time period.

A committee has been formed by the South Mills Fire District Chief to find land to purchase for the construction of a new fire station. The new station would require approximately three acres. The station would also house a rescue squad.

Camden County receives rescue services from the Pasquotank/Camden Rescue Squad and the Pasquotank County Ambulance Service. Both entities use the same equipment. At this time, there are no plans for physical expansion. However, there are plans to establish critical care

transportation as a support to the hospital. This service would require an additional ambulance and appropriate training for employees and squad members.

j. Administrative Services

The county needs additional administrative space. Consideration is being given to moving the Planning Department to a modular unit behind the existing administration building and acquiring land east of NC 343 adjacent to the existing county courthouse property for an additional administration building.

k. Community Facilities Deficiencies

Community facility deficiencies are addressed in Section V (G), Future Demands, page 118 and issues and capabilities for expansion discussed above. However, the following summarizes the most urgent community facilities needs:

- Establishment of water and sewer infrastructure (see page 128 to 130).
- Insufficient administrative office space.
- Insufficient space for the Sheriff's Department (see page 132).
- Implementation of the county's Transportation Improvement Program (see page 125).